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SO-CALLED ACIDOSIS ATTACKS

A PLEA FOR MORE ACCURATE DIAGNOSIS*

By Donald Paterson, M.D. Edin., F.R.C.P. Lond.

PHYSICIAN, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON; PHYSICIAN FOR DISEASES OF CHILDREN, WESTMINSTER HOSPITAL

One of the commonest diagnoses in children's medicine to-day is that of "acidosis." Hardly a day passes that I do not see a case named as such. The symptoms with which the children present themselves are usually fever, vomiting, or diarrhœa, with pale motions; and of late I have noticed a slight tendency on the part of some doctors and parents to doubt whether the explanation covers the facts.

By acidosis is meant the formation of ketone bodies in the blood and urine; that is, the presence of acetone and diacetic acid on the breath, in the blood, and in the urine. Biochemical acidosis, brought about by the shift of the pH of the blood to the acid side, induced by mineral acids, is not what is usually meant by the term as it is used in the clinical sense. It is the *clinical* meaning of acidosis or ketosis which I propose discussing.

The metabolism of the fats is profoundly influenced by the balance between fats and carbohydrates, and if the carbohydrate in the form of starches and sugars be insufficient, the fat will be only partially broken down, and acetone and diacetic acid will be formed. This may be brought about because the amount of carbohydrate absorbed is insufficient, or because too much fat is being given. The usual sequence of events, however, is that the carbohydrate present in the food, and stored in the muscles and liver, is suddenly called upon and used up during an infection. The body, deprived of carbohydrate, looks to its store of fat for energy, and ketone bodies are formed as a result. It may be said then that it is normal for each and every individual with an acute infection to form ketone bodies, and it has been common knowledge for many years that acetone and diacetic acid are the usual constituents of the urine of acutely febrile children. Put shortly, there is nothing very unusual or strange about the presence of ketone bodies in the urine of infected children.

Now what symptoms arise as a result of acetone and diacetic acid being present in the blood and urine of an infant or child? It is difficult to assess the part they play, but a series of experiments done under my eye in the Westminster Hospital some years ago by R. W. B. Ellis [1] impressed me by the lack of clinical signs and symptoms associated with ketogenic diet. The diet used was—

8 A.M.: Olive, half, ½ oz.; ol. morrhuæ, drachms 3; fried fish or sardines, 2 oz.; top milk, 6 oz.; bran biscuits, ad lib.; one slice of white bread; butter, 1 oz.

12.30 P.M.: Minced beef, 3 oz.; cabbage, 2 oz.; butter, 1 oz.; olive oil, ½ oz.; ol. morrhuæ, drachms 3; top rice-pudding, 1 oz.

4.30 P.M.: Fat ham or bacon, 2 oz.; butter, 1 oz.; top milk, 6 oz.; olive oil, ½ oz.; ol. morrhuæ, drachms 3; bran biscuits, ad lib.

Normal children were put on this diet until the urine was heavy with acetone, but apart from a poor appetite and a stationary weight chart they had no symptoms. There was no vomiting, languor, sighing respiration, pallor, or other symptoms so commonly attributed to the presence of acetone; in fact, they were clean-tongued and cheerful, though they lacked appetite or wish for food. The same result may be seen in the epileptic child having a ketogenic diet, and left on it for many months. No great difficulty is found in maintaining the diet, and few symptoms arise from it.

I would stress the fact, then, that in the vast majority of children acidosis or ketosis by itself leads to little or no change in the clinical picture. We must conclude that the symptoms attributed to "acidosis" are produced by the factor which produces the acetone—and this is usually an infection.

Cause of Cyclical Vomiting

To throw some light on this problem, let me turn to the old-fashioned condition termed "cyclical vomiting," which in its extreme form is a comparative rarity to-day. Usually it is described in this way—a thin, nervous child, of neurotic unstable stock, gets recurrent bouts of vomiting at short intervals, possibly every three or four weeks. These attacks are ushered in by yawning, pallor, lassitude, and irritability for a few hours, and during this period the sweet smell of acetone may be detected on the breath. The temperature is found to be raised, but not particularly high. A few hours later vomiting commences. This is so severe that not even a teaspoonful of water is kept down. The child rapidly becomes sunken and drowsy, the abdomen is scaphoid, and finally the vomit may be coffee-ground, or may even contain bright blood. After two or three days the vomiting suddenly ceases, and in the most dramatic fashion the child recovers. An examination of the urine throughout shows the presence of acetone and diacetic acid. There is often a complaint of abdominal pain or discomfort, but usually this *follows* the vomiting rather than precedes it.

Children with typical cyclical vomiting have been admitted to hospital, in various parts of the world, for investigation. Findlay [2] found that a cyclical vomiter, just recovering from a typical attack, continued to improve, and recovered well, while actually on a ketogenic diet, and he was unable to cause attacks of vomiting in such children by giving them a ketogenic diet while they were in hospital, although their urine contained much acetone. Ellis [1] put two children who were typical cyclical vomiters and also two children who had had fever and convulsions (with acetone in their urine and cerebro-spinal fluid) on a high fat-low carbohydrate diet; and although all developed a marked ketosis, and the cerebro-spinal fluid of the second two contained much acetone, no vomiting or other symptoms developed.

It appears then that there must be some missing factor, other than the production of acetone, to account for the clinical picture in cases of cyclical vomiting.

Graham and Morris,[3] who likewise failed to produce symptoms in children on a ketogenic diet, have concluded that a low blood-sugar (hypoglycæmia) is not, as some hold, responsible for the ketosis or vomiting; for the children they investigated showed a normal or, in fact, a raised blood-sugar. Their investigations have led them to believe that there is an impaired hepatic function; they have found urobilin in the urine during an attack, and the lævulose-tolerance test bears this out. Holt and McIntosh,[4] on the other hand, think that cyclical vomiting is associated with neurotic stock, and that a low blood-sugar plays a definite part in it. John Thomson [5] maintained that the liver showed an accumulation of fats, especially in neurotic children, and that there was some connexion between these attacks and migraine, sick headache, asthma, and eczema.

Bray,[6] discussing migraine, suggests that most cases of cyclical vomiting in childhood are, in fact, abdominal

* Given before the South-West London Medical Society on Feb. 13th.

migraine, but he points out that the attack of migraine rarely lasts more than 24 hours. It recurs at very frequent intervals, from two to three times a week to once a month, and acetone is not commonly present. Headache is usually prominent. Payne[7] regards cyclical vomiting as a metabolic disturbance centred in the liver. J. C. Spence[8] holds that it is due to a recurrent toxæmia from some such cause as tonsillitis or hepatitis. The vomiting and drowsiness are identical with the vomiting and drowsiness seen at the onset of many acute febrile illnesses, and the ketosis is a mere epiphenomenon.

Reginald Miller[9] says that cyclical vomiting attacks are due to an acute poisoning of the liver, which often shows itself by pale stools, and he suggests that a diminished glycogen reserve in the liver renders that organ vulnerable to poisons, and certainly an intestinal toxæmia. He thinks that the withholding of a normal supply of fat in the diet is unnecessary, and may be harmful.

An excellent description of cyclical vomiting, and of the child most prone to such attacks, has been given by H. C. Cameron[11] in his book "The Nervous Child"; but it seems to me that he puts too much emphasis on the constitutional and psychological side, and on the effects of the ketosis. He points out the value of carbohydrate, especially glucose, in such cases, but he evidently does not consider infections as a common cause of the symptoms described.

Most authorities agree that cyclical vomiting is a metabolic disturbance; they cannot decide whether this disturbance is due to infective, dietetic, psychological, or allergic factors. My own feeling is that far too little stress has been laid on infection as the cause of the attacks. There can be no doubt that the vast majority are accompanied by fever, especially at the start, and that the old term "chill on the liver" describes the condition extremely well. Unfortunately even the absence of fever does not exclude infection.

A boy, aged 5 years 9 months, was seen by me on Jan. 19th, with a normal temperature and normal ears, at 10 A.M. At 4 P.M. he complained of slight earache, and at 10 P.M. his drums were red and inclined to bulge. For the next day or two the situation remained unchanged; then they gradually subsided. At no time was the child's temperature more than 98° F., and the urine contained acetone throughout.

Very often the practitioner is asked to see the child when the vomiting has already begun. A full 24 hours or more may have elapsed since the prodromal symptoms appeared, and the signs of infection are then less obvious. Children show widely differing reactions to infections. On the one hand you have slight nasal catarrh, accompanied by diarrhœa, or acute tonsillitis accompanied by a high fever and vomiting. A thin, nervous, wiry child may show little or no outward sign of his infection; nevertheless, it may be present.

Post-mortem examinations of cases of cyclical vomiting show conspicuous fatty changes in the liver. Urobilin in the urine and indeed definite jaundice have sometimes developed in typical cases, and I think one should assume that the underlying pathology always includes some degree of cloudy swelling of the liver cells, brought about by an infection—most often a passing cold or sore-throat.

Dangers of Diagnosing Acidosis

When a doctor is presented with a feverish and vomiting child who has acetone in the urine, an acceptance of the diagnosis of acidosis carries with it grave risk of missing gross organic disease. I have often seen cases wrongly given this diagnosis, and later proved to be abdominal tuberculosis, appendicitis, pyelitis, typhoid, or lobar pneumonia. There are classical cases, some of the best being those reported by Poynton,[10] in which partial volvulus of the small intestine gave rise to symptoms of vomiting with abdominal pain, and the production of much acetone and diacetic acid. There is a great tendency for the volvulus to right itself and then recur a few weeks or months later. In such cases the abdomen is distended, and the pain marked, whereas in the true cyclical vomiter there is a scaphoid abdomen, and the pain follows the vomiting instead of preceding it.

A practitioner should pause, therefore, before making the diagnosis of acidosis, all the more when reminded that it is one very little used in a children's hospital. For instance, out of many thousands of admissions, over a period of ten years, it only appeared six times at Great Ormond-street.

The usual case which a practitioner is called to see and treat is not one of the extreme degree which I have depicted, but merely of a feverish child who has had probably less than half a dozen vomits, and who has an offensive breath, dirty tongue, pale stools, and a disinclination for food. After a day on light fat-free diet, the patient is well or nearly well, the whole thing being over in two or three days. A careful examination of the nasopharynx and ears will usually reveal the presence of an infection.

Treatment of Cyclical Vomiting

When two or three of these attacks have occurred, and the label of "acidosis" has been attached to them, it is said that such children tolerate fat badly, and they are put on a diet extremely low in fat and high in carbohydrate. This usually contains little or no milk, and what is given has been skimmed. Extra glucose is given during the day, in varying quantities, and vitamin D may be added. The low-fat diet may be continued for many months, or even years, but this I believe to be a complete mistake. During the actual attack fats in the form of milk, butter, cream, egg-yolk, dripping, and oils, including cod- and halibut-liver oil, should be rigorously excluded; but once the attack is over the child should be put back once more on to a normal diet. It is reasonable to expect, especially in slight cases, that an interval of a few months may pass, even if nothing is done in the way of prevention, before another attack need be expected, and I believe it to be a mistake to deprive a child of a normal diet because of the chance of another attack.

If you were faced with the treatment of a case of epilepsy in which a child had a fit once or twice a year, would you give bromide or some other drug each and every day to prevent that remote possibility? I doubt it. If, by keeping the child who gets acidosis on a rigorous low fat-high carbohydrate diet continuously, one were sure of preventing further attacks, there might be some slight grounds for doing it, but this is not so. In my opinion, the next sharp infection—such as influenza, scarlet fever, or acute sore-throat—would produce another of the attacks; and a straightforward infection, which ought to be easily understood, becomes shrouded in a mist of words such as "acetone" and "acidosis."

In the treatment of an acute attack most careful examination is necessary to exclude organic disease. A good view of the throat must be obtained at the risk of causing further vomiting. The ears should be seen and the abdomen carefully palpated. The mother should be questioned as to the presence of abdominal pain, and it should be especially noted whether the pain preceded or followed the vomiting. If it preceded it, abdominal disease of some description should be suspected and searched for. The lungs should not be forgotten, for a deep-seated lobar pneumonia may begin with fever and vomiting. Once the practitioner has made up his mind that this is a mild infective hepatitis, the administration of

glucose, either in its fluid form or as powder by the mouth, or with saline subcutaneously, rectally, or intravenously, should be proceeded with immediately, especially if the vomiting is severe. In severe cases I have seen patients become comatose, and even die, for lack of treatment.

It is impossible to know when a simple case may become a more severe one, so each attack should be taken seriously. Where there is much vomiting constipation is usually present also, and advantage should be taken of this fact to give rectal saline and glucose. The help of the district nurse should be obtained. Even if the saline and glucose is returned, it will cause the bowels to be opened, which is an advantage. Where there is diarrhœa, vomiting is usually much less severe, and the giving of glucose by the mouth will rapidly remove the acetone and provide the body with easily assimilated food which requires little or no work on the part of the liver.

Where an obvious nasopharyngeal infection exists, treatment of the throat with powdered aspirin, or the bulging red ear-drums by incision, will bring about cessation of the vomiting. It is seldom a good thing to give bicarbonate of soda to these children after the vomiting has commenced.

Prevention

Most good can be done in the prevention of the attacks. If the primary infection be in the tonsils and adenoids these should be removed, and in my experience this has prevented the vast majority from having further attacks. Occasionally, especially in girls, examination of the urine will reveal pus, showing that each attack was really a recurrence of acute pyelitis. A well-balanced diet will maintain a better standard of health and nutrition, and thus lay the child open to fewer infections, so that fewer attacks are precipitated. So often one sees the victims of an anti-acidosis diet with every tooth stopped, a thin emaciated body, and a dry skin. The treatment has made the child much more ill than the actual attacks themselves.

A diagnosis of acidosis often suggests that the fault lies in the mother or nurse, and that their dieting and management have been at fault. Surely this is an unfair assumption. The prevention of ordinary infections by the strict isolation of children with common colds is becoming commoner. The mother of a child especially prone to chills on the liver may do much to forestall an attack by watching the stools daily; when they become pale she can reduce the fat temporarily and administer some mild saline aperient. Whenever possible she should isolate the child from other children in the nursery who have colds, and at the first of the prodromal signs of yawning, lassitude, and pallor, which to me indicate the onset of an infection rather than only the formation of acetone, she should promptly administer glucose and summon the doctor. He may see fit, in appropriate cases, to give a little aspirin and a purge, and a great many of the attacks can in this way be aborted or checked before they really start.

I would sum up in this way: that the diagnosis of acidosis is a bad one, and should never be used. We ought rather to think of the process underlying this clinical picture. This will rarely be found to be primarily dietetic, but rather infective in origin. A search for the source of the infection, usually nasopharyngeal, should be made, and this should be treated. Prevention depends on educating the mother to be on the alert for the first signs of liver infection which gives rise to this symptomatic vomiting.

(*References at foot of next column*)

A STUDY OF PNEUMOCOCCAL PNEUMONIA

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THE ROYAL COLLEGE OF PHYSICIANS OF LONDON

III*

THE RADIOLOGY OF PNEUMONIA

(WITH ILLUSTRATIVE PLATES)

The radiological changes caused by acute inflammatory diseases of the lungs have not been studied so extensively as those due to chronic diseases, partly because of difficulties in technique and partly because the patient is often too ill to allow of more than the briefest examination.

This paper is based on the radiological examination of 119 cases of pneumococcal pneumonia, and the results have been correlated with the clinical and bacteriological findings; during the investigation approximately 1500 radiograms were taken. The patients were all collected in one ward and in order that exposures should be as short as possible a four-valve transformer, capable of an output of 400 milliamperes at 85 KV., was installed. A tube stand was built for the work, which would give a tube-film distance of 6½ feet above the beds. With this apparatus the exposures varied from 0·02 second for a child, to 0·1 second or a little over for an adult. The bed, which was on castors, was wheeled beneath the tube stand, and the exposures were made, with almost no disturbance of the patient. Radiograms were taken every second or third day. The tube was centred in the supine position at the level of the third costal cartilage.

Radiographic Characteristics

In order to appreciate the varying appearances in lobar pneumonia—and these depend largely on the lobe involved—one has to visualise the location and direction of the interlobar fissures (see accompanying diagrams). The two drawings on the left show the lung as seen in the antero-posterior and postero-anterior planes; those on the right show the lateral

* This section of the work was done with the assistance of Dr. T. V. L. Critchlow, to whom we wish to record our gratitude. Parts I. and II. have appeared in the last two issues of THE LANCET.

DR. D. PATERSON: REFERENCES

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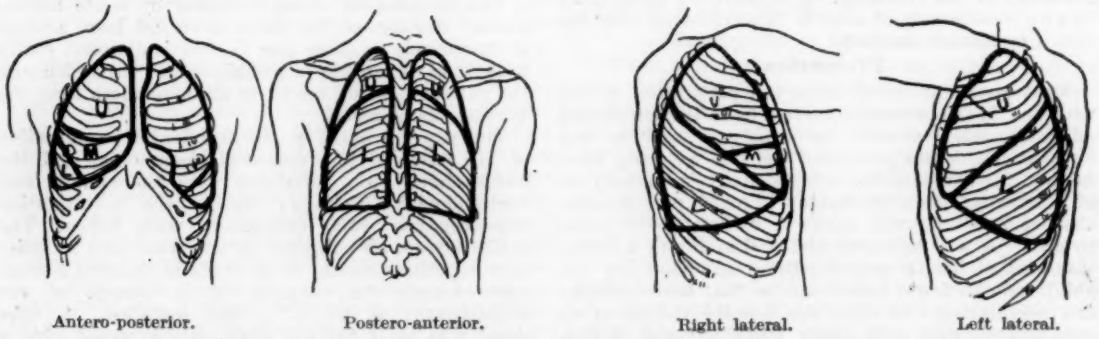
aspect of the lobes. The diagram of the right lung illustrates that the upper lobe presents prominently on the anterior chest wall, while the lower lobe is mainly in contact with the posterior chest wall. The middle lobe is wedge-shaped, and does not come in contact with the posterior wall, its farthest point posteriorly being the hilum, where the interlobar pleura divides (Fig. I. on Plate). On the left side the upper lobe corresponds to the upper and middle lobes of the right.

Consolidation in lobar pneumonia takes place very rapidly as judged by radiograms; for characteristic appearances are usually well marked throughout the entire lobe within twenty-four hours of the onset. The opacity of a pneumonic lobe, as seen in the antero-posterior view, is not homogeneous except where consolidation is so intense as to allow no radiographic differentiation in density. The reason for this is obvious from a study of the diagram—namely, that the lobe is wedge-shaped and the density of its shadow consequently diminishes towards the apex. Unless this important fact is borne in mind, an erroneous interpretation may be made. For example, pneumonia confined to the left lower lobe might be interpreted as also involving the base of the left upper lobe (Figs. II.A and II.B).

Mistakes can always be avoided by taking a lateral radiogram, which shows the exact outline of the involved area. Consolidation in the right upper lobe shows a sharply define lower border, and for the same topographical reason middle lobe consolidation shows a sharply defined upper border. The lower border of a middle lobe pneumonia and the upper part of a lower lobe pneumonia show a shading-off in density. Middle lobe consolidation is easily distinguishable in the lateral radiogram because the consolidation is situated anteriorly, while in the antero-posterior plane there is aeration of the costophrenic angle, unless the lower lobe is also involved. Right lower lobe consolidation extends upwards to the third interspace behind; and unless a lateral view is taken, it may be thought that the middle lobe and part of the upper lobe are also involved. Here also the gradual shading-off of the density in an upward direction helps to prevent mistakes. In the left lung, lower lobe involvement gives a shadow similar to lower lobe involvement on the right side. Consolidation of the left upper lobe lacks the sharp lower border of right upper lobe consolidation; and instead there is a hazy lower border, gradually diminishing in density.



Antero-posterior. Postero-anterior. Right lateral. Left lateral.

Diagrams illustrating position of the interlobar septa (after Sante). U = upper, M = middle, L = lower, lobes.

THE EARLY STAGES OF PNEUMONIA

Most pneumonia patients are admitted to hospital late in their illness. Ours were no exception and only a comparatively small proportion were observed in the early stages. Nevertheless 9 were examined within the first forty-eight hours, and 16 within the first seventy-two. In most of these cases the first change noted was an increase in the density and extent of the hilar shadow on the affected side. From the hilum the opacity spreads rapidly towards the periphery, which is the last area to be involved. Even within twenty-four hours of the initial rigor the opacity can be dense and involve a whole lobe without showing any intervening areas of aeration (Figs. III.A and IV.). If the radiogram is slightly overpenetrated and viewed with a strong transmitted light, further details can be seen. Numerous dense thickened "striæ" radiating out from the hilum can be distinguished in the affected region and these are possibly due to the inflammatory engorgement of the vascular and lymphatic tissues.

Coincident with the development of opacity there may be three other changes, but it is hard to say which occurs first, or whether they are simultaneous.

1. The diaphragm on the affected side rises, usually as much as one or two intercostal spaces, regardless of whether a lower or an upper lobe is involved. We have also noticed that sometimes the diaphragm on the unaffected side rises also (Figs. V.A and V.B).

2. The intercostal spaces over the affected lobe or lobes become narrowed.

3. There is occasionally some deflection of the heart and mediastinal structures to the affected side (Fig. VI.). This seems to happen only when the pneumonic process develops very rapidly.

In a few cases—notably in Type III. and Group IV. infections—the X ray appearances in the initial stages are entirely different. Thus the earliest sign may be an opacity at the periphery of the affected lobe and between this opaque area and the hilum there is a zone of normally aerated lung tissue, without any radiological sign of disease. As the disease progresses the consolidation spreads inwards from the opaque area until it reaches the hilum (Figs. XI. and XX.). It is noteworthy that in the peripheral type of pneumonia there may be no definite physical signs until the apex of the opacity has reached the hilum, after which characteristic signs are obtainable.

These two modes of initiation and spread, the "central" and the "peripheral," are quite definite and apparently different. The peripheral spread was in our experience confined to a few cases of Type III. and Group IV. infection.

The opacity increases in density and usually reaches its maximum between the fourth and seventh day; not until resolution begins does it lessen in density. The early appearances have been commented upon by a number of writers. Sante,[25] who has done

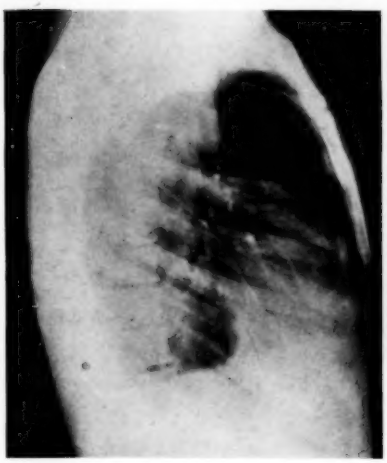


FIG. I.—Lateral view of chest, demonstrating the interlobar fissures of the right lung.

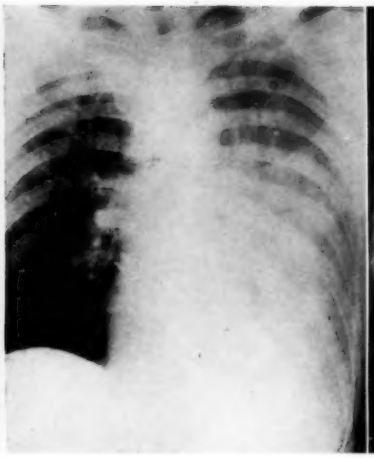


FIG. II.a.—Anteroposterior view, showing opacity of left side of the chest, which might be interpreted as involvement of the lower and upper lobes. 2nd day of disease. (Type I.)

FIG. II.b.—Same case. Lateral view, demonstrating that the opacity is confined to left lower lobe only. 2nd day.

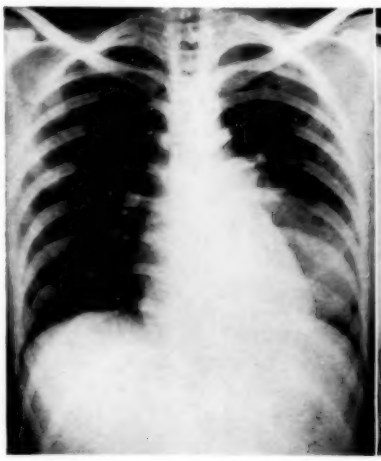


FIG. III.a.—Left lower lobe consolidation, within first 24 hours. (Group IV.)

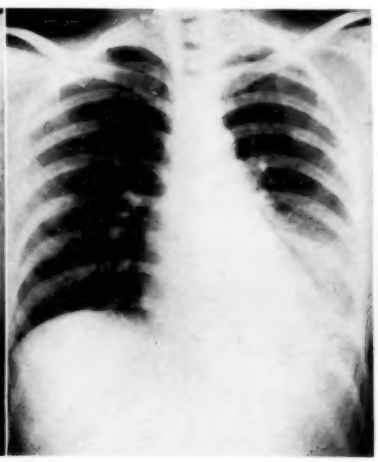


FIG. III.b.—Same case on 23rd day. Hilar glands not enlarged. Delayed resolution.

FIG. IV.—Left lower lobe consolidation in first 30 hours. Note the "hazy" opacity spreading to periphery. (Type I.)

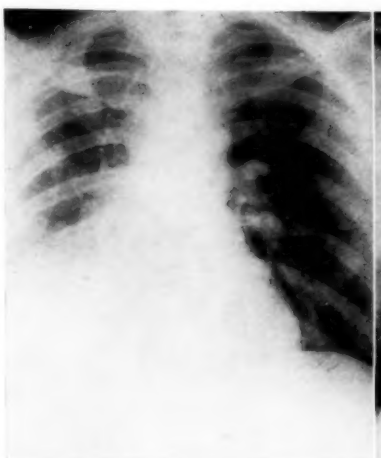


FIG. V.a.—Right lower lobe consolidation with elevation of both diaphragms: right diaphragm at lower border of fourth rib; left at upper border of fifth rib. 4th day of disease. (Group IV.)

FIG. V.b.—Same case on 35th day. Note level of diaphragm now: right, upper border of sixth rib; left, upper border of seventh.

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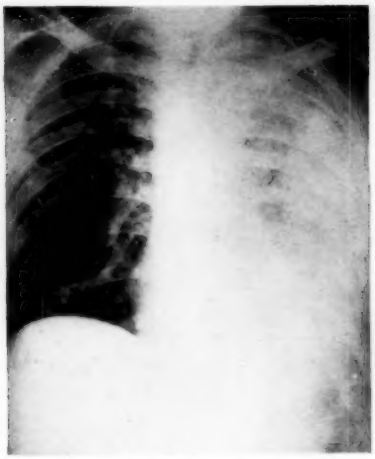

FIG. VI.—Left lung consolidation. 4th day of disease. Trachea and heart displaced to the affected side. (Type I.)

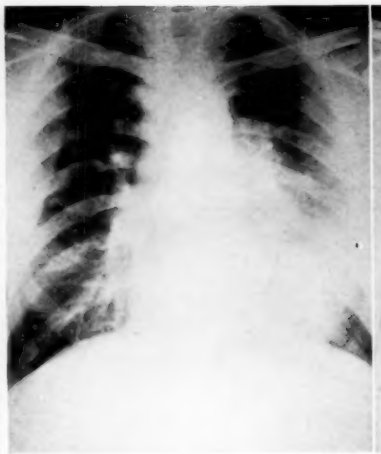

FIG. VII.a.—Left lower lobe consolidation within 24 hours of onset. Opacity spreading towards the periphery. (Type I.)

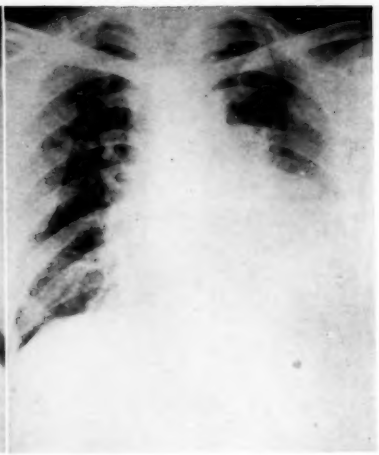

FIG. VII.b.—Same case on 9th day. Crisis on 3rd day under serum treatment but progressive consolidation up to 9th.

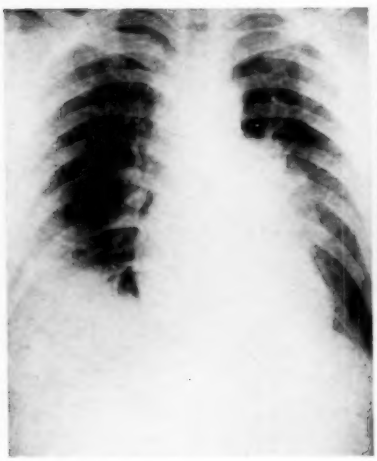

FIG. VIII.—Right lower lobe and left lower lobe consolidation, within first 30 hours. (Type I.)

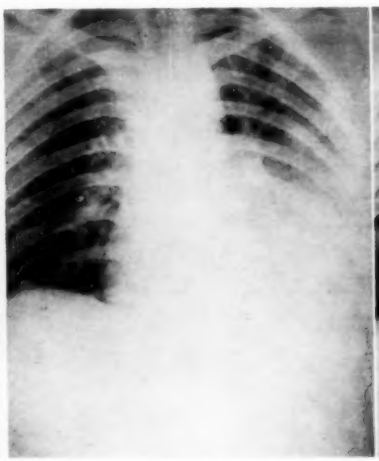

FIG. IX.a.—Left lower lobe consolidation. 6th day. Obvious enlargement of hilar glands. (Type I.)

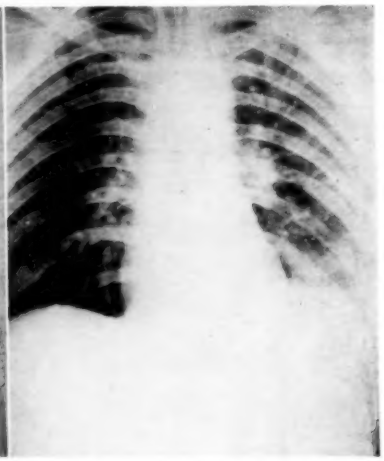

FIG. IX.b.—Same case on 11th day. Rapid resolution. Enlargement of hilar glands. Left diaphragm remains at a high level.

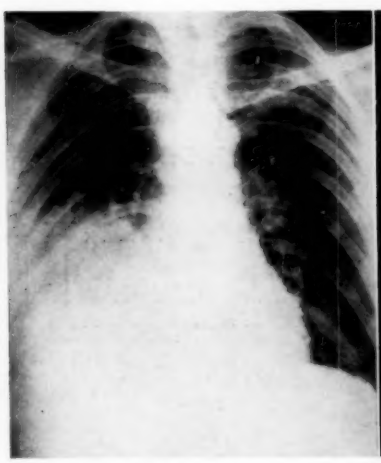

FIG. X.a.—Right lower lobe consolidation. 7th day. No evidence of effusion. Right diaphragm at fourth rib. (Type I.)

FIG. X.b.—Same case on same day. Lateral view, showing no effusion.

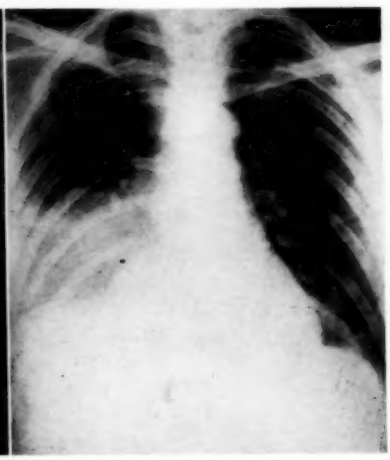

FIG. X.c.—Same case on 11th day. Still no evidence of effusion. Clinical signs suggested early empyema and pus was aspirated on the 12th day. Rib-resection eventually necessary.

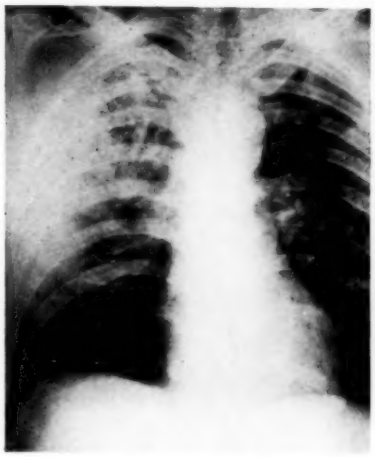

FIG. XI.—Right upper lobe consolidation. 3rd day. Peripheral type of distribution. (Group IV.)

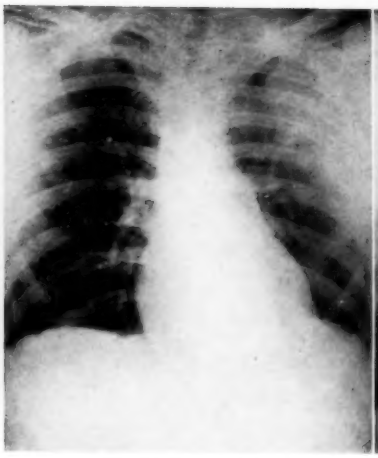

FIG. XII.a.—Left upper lobe consolidation. 7th day. "Hazy" opacity. (Type I.)

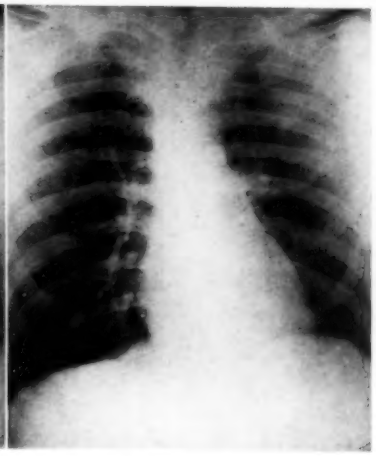

FIG. XII.b.—Same case on 14th day. Almost complete resolution.

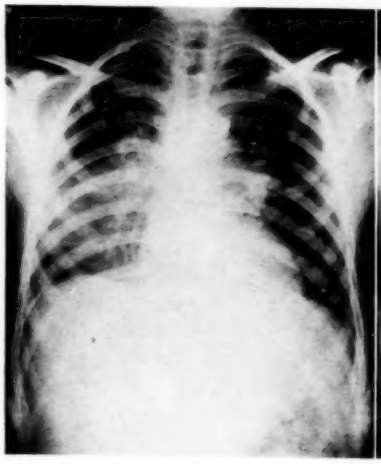

FIG. XIII.a.—Right lower lobe consolidation. 4th day. Note left hilar shadow enlargement. Right diaphragm at fifth rib. (Type I.)

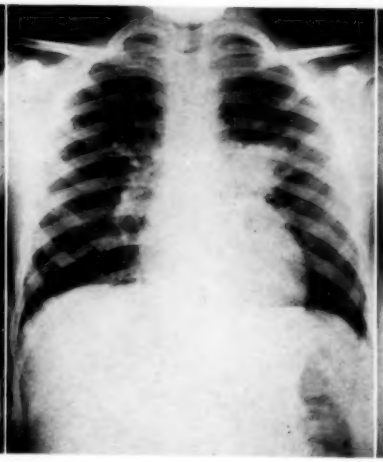

FIG. XIII.b.—Same case on 16th day. Right base cleared completely. Left hilar shadow extending. Clinical signs now apparent over this area. No constitutional symptoms. Right diaphragm at sixth rib.

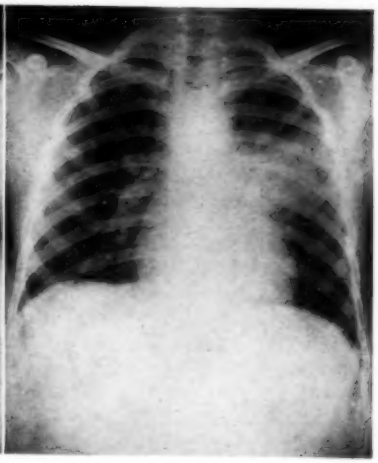

FIG. XIII.c.—Same case on 28th day. Left hilar shadow has extended to involve a large portion of lung. Right diaphragm still at sixth rib.

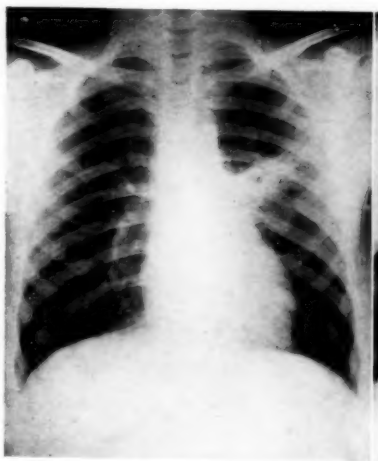

FIG. XIII.d.—Same case on 170th day. Left hilar shadow. Slow resolution. Right diaphragm at seventh rib.

FIG. XIII.e.—Same case two years later. Showing post-pneumonic fibrosis in area previously the seat of slow resolution. Rt. diaphragm at seventh rib.

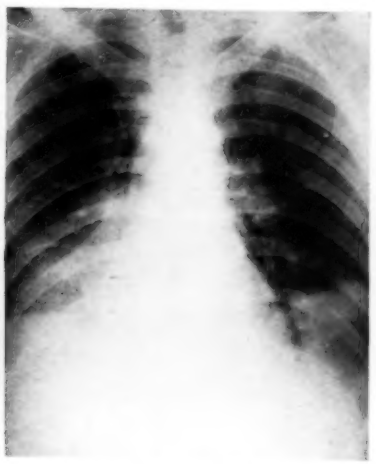

FIG. XIV.—Right lower lobe pneumonia, serum-treated, 2nd day. Small area of consolidation left base, undetected clinically. (Type I.)

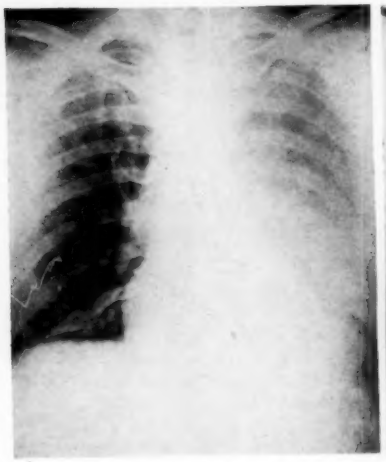

FIG. XV.—Lower lobe and upper lobe consolidation, left side. 15th day. Upper lobe consolidation not detected clinically. (Type I.)

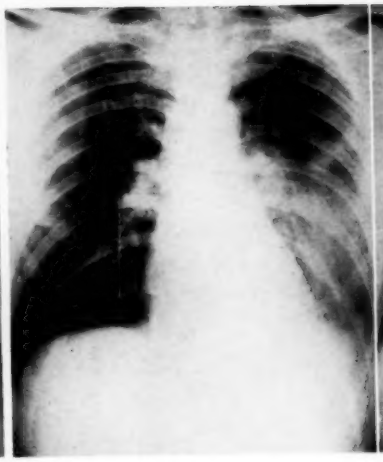

FIG. XVI.a.—Left lower lobe consolidation. 4th day. Calcified glands in both roots. (Type I.)

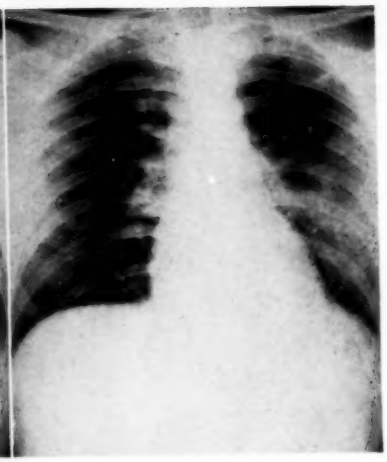

FIG. XVI.b.—Same case on 81st day. Delayed resolution. Calcified glands in roots.

FIG. XVII.—Massive consolidation of both lower lobes. 7th day. Death on 10th day. (Type I.)

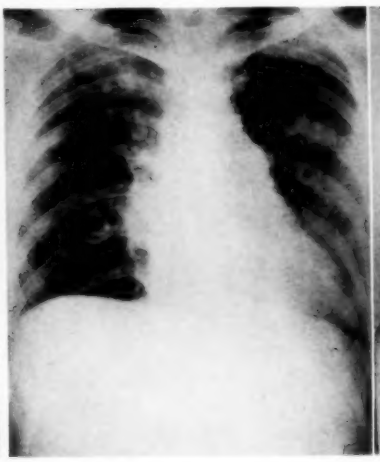

FIG. XVIII.a.—Group IV. pneumonia. 8th day. Scattered areas of consolidation in right upper lobe, right and left lower lobe. Appearances resembling "cavity" in right lower lobe.

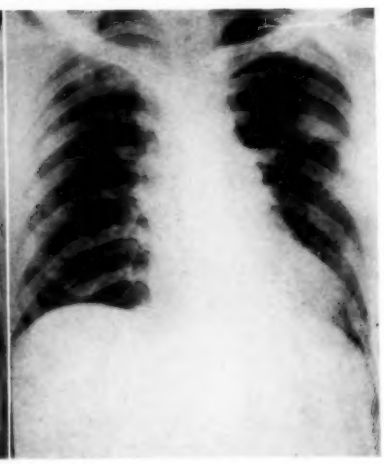

FIG. XVIII.b.—Same case on 55th day. Areas of consolidation still present. "Cavity" in right lower lobe can hardly be distinguished.

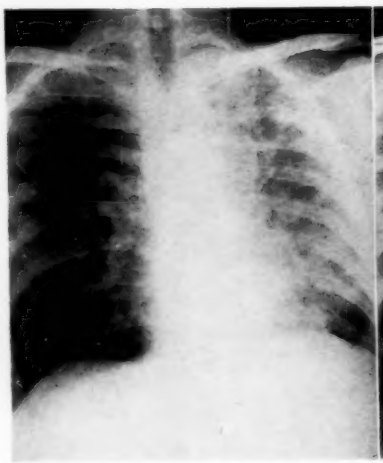

FIG. XIX.a.—Group IV. pneumonia. 18th day. Scattered areas of consolidation in left lung. "Cavity" in left upper zone barely perceptible.

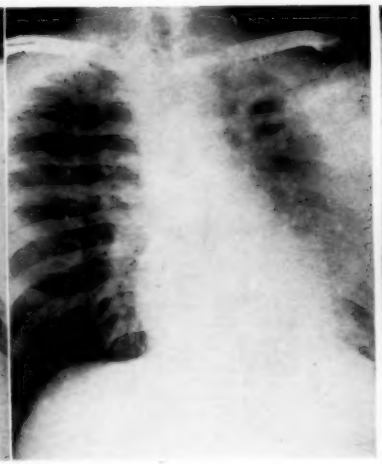

FIG. XIX.b.—Same case on 33rd day. "Cavity" in left zone more conspicuous.

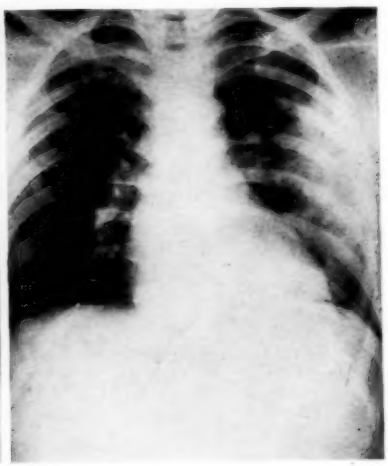

FIG. XX.—Left lower lobe. Peripheral form of consolidation. Atypical clinical signs. (Type III.)

much work on the subject, found dense consolidation within the first twenty-four hours and maintained that the central mode of spread is by far the commoner. This view has been criticised by others but our results confirm it. Mason [26] and Weill and Mouriquand [27] state that in children (in whom a Type I. or II. infection is rare) the peripheral form of spread is more usual.

The rapidity of consolidation is remarkable. Terrell, Robertson, and Coggeshall [28] in an experimental study of pneumonia in dogs found it well advanced within the first day, and also noted elevation of the diaphragm. In 42 dogs out of 105 definite mediastinal displacement was recorded; where the pneumonic process spread slowly there was little, but when the lobe or lobes were rapidly consolidated some shift was clearly demonstrable.

DOES THE LOBE COLLAPSE?

The recognition of rapid consolidation by means of X rays may throw some light on the mechanism by which it takes place. There are two possible processes: it may be due to spread of the infection from the hilum through the interstitial lung tissue around the vessels and branches of the bronchi, or it may depend on some degree of lobar collapse with infection spreading through the portion thus altered. In support of the latter alternative we found elevation of the diaphragm on the affected side, as well as narrowing of the intercostal spaces, whilst in one case there was a shift of the mediastinal structures. Coryllos and Birnbaum [29] in 1929 drew attention to the similarity between atelectasis and lobar pneumonia, and were led to believe that the two conditions were secondary to obstruction of a large bronchus, the obstruction causing atelectasis, circulatory changes, and pulmonary cellulitis. Their investigations included direct observation by bronchoscopy, and they found that the bronchus was frequently blocked. There is therefore some support for Meltzer's view,[30] expressed in 1914, that "the mere presence of pneumococci in the bronchi is not sufficient to produce a pneumococcal infection, but if a previous cold furnishes the mucous secretion which might occlude several small bronchi the ground is prepared for pneumonia." It must be added, however, that Terrell, Robertson, and Coggeshall did not find mucous plugs in the bronchi of experimental pneumonic dogs until quite late in the disease.

Graeser, Wu, and Robertson [31] lately recorded unmistakable radiological signs of pneumonia in 14 patients within thirty hours of the onset of the pneumonia. Furthermore, they found elevation of the diaphragm on the side of the lesion in 18 out of 29 cases, with mediastinal displacement in 3 out of 40. They also comment upon the rarity of peripheral spread—which was seen in only 2 of the 40 cases.

The evidence is somewhat contradictory, and it remains uncertain how large a part collapse plays in the initiation of the pneumonic process. It is indeed quite possible that there is considerable variation; thus in cases showing very rapid consolidation there may be some associated atelectasis secondary to an accident such as the blockage of a reasonably sized bronchus by a plug of mucus, while in cases with a slower spread the process may be purely inflammatory.

Type I. Pneumococcal Pneumonia

Type I. pneumonia is the classical variety: it is sudden in onset and the physical signs during the illness are usually well defined. It is not surprising therefore that the X ray appearances are also distinct and uniform. Of our own Type I. cases 37 were followed through the infection, and we hope to show close agreement between the clinical and radiological signs, noting also the occasions on which added information was obtained by radiography.

It will be convenient to consider separately those which had no specific treatment (18) and those which had Felton's serum (19).

UNTREATED WITH SERUM

Early signs.—Of this group 2 were radiographed within thirty hours of the onset (Fig. VIII.), and it is interesting to record that in both of them X rays showed consolidation on both sides of the chest, whereas clinical examination had suggested that only one lung was involved.

The *established consolidation.*—The opacity spreads outwards from the hilum, involving the periphery last, and varies in density from hazy to dense. We have used the term "hazy" when the line of the diaphragm could be seen and "dense" when it could not. Of the 18 patients only 4 gave hazy shadows; in 2 of these no physical signs could be detected and in the other 2 they were not characteristic of consolidation. In the 14 in whom the opacity was dense the X ray and clinical findings corresponded closely. In 4 of these, however, radiography showed more extensive disease than was indicated by clinical signs. It was somewhat surprising to find that in only 8 out of the 18 was the pneumonia confined to one lobe, although clinically there were only 2 with definite signs that more than one lobe was involved. Consolidation was maximal on the seventh to eighth day. The average day of crisis was the eighth.

Resolution.—As soon as resolution begins—and not before—the hilar glands on both the affected and unaffected sides show obvious enlargement (Figs. IX.A and IX.B). Accordingly, when a case is radiographed some ten days after the onset it is possible to give an opinion whether resolution has or has not begun. The glandular enlargement which takes place during resolution is quite unlike the enlargement due to old pulmonary disease, where the glands are irregular in outline; here they are globular and appear swollen. The time required for complete resolution is very variable. Some lobes have appeared normal 10–14 days after the onset, while others have shown a delay up to the fiftieth. The average for our untreated Type I. group was 20 days from the beginning of the illness. The rate of resolution presumably depends on the extent of the consolidation and its density. Our experience is that enlarged hilar glands are associated with rapid resolution, whereas calcified glands—the result of past disease—are usually associated with some delay. This will be evident from our description of other Type infections.

Complications.—Two patients who developed empyema showed dense consolidation from the outset. Clinical signs were more reliable than the X ray appearances in revealing this complication (Figs. X.A, X.B, and X.C). It would be irrational to expect radiography to disclose a small layer of pus in an area already opaque through consolidation.

Severity of illness.—Although there were exceptions, we came to regard a dense consolidation as being usually associated with severe constitutional symptoms; a hazy opacity on the other hand was characteristic of the milder forms of pneumonia. Of our 18 cases 8 were classified as mild, and of these 4 showed hazy opacities. The milder the case the more rapid the resolution. An example of this is

seen in Figs. XII.A and XII.B, illustrating a case in which clinical signs were indefinite; X ray examination showed a hazy opacity in the left upper lobe, the crisis occurred on the fourth day and radiological signs of abnormality had almost disappeared from the lung by the fourteenth (Fig. XII.B).

Extension of consolidation.—Only one case in the Type I. group showed an extension of the pneumonic process (Fig. XIII.A–E). Despite an early crisis on the fourth day the initial consolidation in the right lower lobe was slow in clearing, and there was much enlargement of hilar glands. From the fifteenth day onwards there was a gradual extension of the left hilar shadow which ultimately involved the whole of the left upper lobe. This gave typical physical signs four days after it was first noted on the X ray films. While the initial consolidation was resolving this shadow extended, and it remained persistent for some considerable time. The patient was radiographed as late as the 170th day, and even then some shadowing was still present. We have observed that while a rapidly forming consolidation often as rapidly disappears, a slowly forming one frequently ends in delayed resolution and sometimes permanent fibrosis.

SERUM-TREATED CASES

Early signs.—Of the 19 in this group 5 were radiographed within forty-eight hours of the onset. In all 5 a definite opacity was seen spreading from the hilum to a lower lobe. The physical signs were equally clear and no difficulty was experienced clinically in outlining the lobe involved, although in one case a smaller area of consolidation on the opposite side was only detected radiologically at that time (Fig. XIV.).

Established consolidation.—Dense opacities were observed in 14 of the cases at the height of the illness, while the other 5 showed only a hazy consolidation and atypical physical signs. In 5 cases the clinical signs did not indicate the full extent of the lung involvement, and it is important to note that in 4 of these it was an upper lobe consolidation that was missed (Fig. XV.). The physical signs of upper lobe pneumonia are, in fact, surprisingly few—as Graeser, Wu, and Robertson have already remarked.

The effect of serum treatment is to shorten the febrile period and induce an early crisis, but no material hastening of resolution was observed in our cases. Indeed, some with few signs of consolidation when serum treatment started on the first day showed progressive consolidation despite an early crisis on the third day (Figs. VII.A and VII.B). The average day of crisis in the first 10 cases which were treated in the second and third day of their illness was the fourth to fifth, whereas the clinical and X ray signs reached their maximum on the seventh. Although the number of our cases is small, we feel justified in stating that, in spite of the dramatic relief afforded by serotherapy, it has no demonstrable local effect on the consolidation.

Resolution.—The most rapid resolution was in a patient treated with serum on the second day. The crisis was on the third, and no radiological signs could be seen on the seventh. In 4 which showed long delayed resolution—up to the ninetieth, fifty-ninth, fifty-first, and thirtieth days—calcification of the hilar glands was present. Of these patients 9 suffered from chronic chest disease, and the average day of complete radiological resolution among them was the thirty-first from the onset of the illness (Figs. XVI.A and XVI.B). In contrast, 7 patients who were previously well and who were free of complications showed complete radiological resolution, on the average, by the fourteenth.

Complications.—There were 3 cases of empyema in this group, and the one which was fatal showed bilateral empyema. In all 3 the consolidation was very dense from the outset.

Extension of consolidation was seen in only one case. The process eventually involved all of both lungs except the right upper lobe (Fig. XVII.)

Type II. Pneumococcal Pneumonia

Type II. pneumonia is more severe than Type I. The toxic pallor and the quiet resignation of the patient contrast forcibly with the high colour and restlessness of Type I. infection. The onset is sudden and the signs of consolidation are usually well defined.

Seven of our patients were studied from the fourth day onwards. The general X ray appearances differed in no way from those seen in Type I., but whereas in the normally progressing Type I. infection the lung cleared up completely, leaving no trace of the inflammation, in Type II. there seemed to be a tendency to a permanent, although slight, increase in the density and extent of the pulmonary striæ.

The relation between clinical and radiological signs was more or less close. The infection was confined to one lobe in 4 of the patients; in the remaining 3 (2 of whom died) two lobes were consolidated. Resolution was complete in a period varying from 12 and 31 days. Enlargement of hilar glands was observed as in Type I.

Type III. Pneumococcal Pneumonia

This form of pneumococcal infection is known to attack the debilitated and aged, and carries a high mortality. The course is often ill-defined, and the onset less sudden than in the types so far considered. Often the signs of consolidation are few. It is not surprising therefore to find that the opacity is unlike that seen in Types I. and II. As a rule it is not homogeneous; frequently it is patchy and generally peripheral in distribution (Fig. XX.). The appearances also differ in that the level of the diaphragm usually remains unchanged. The date of resolution in our series varied between the thirteenth and seventy-second day.

This group, although small, contains most of the features accepted as characteristic of Type III. infections. Of the 12 patients 5 gave a history of chronic bronchitis, and in 3 of these calcification of the hilar glands could be detected. In the cases showing chronic disease of the chest the consolidation was ill-defined and either resolution was delayed or the patient died. In contrast to these older subjects there is another class of patient—younger in years, with better defined consolidation, an early crisis, and more rapid resolution.

It is significant that we have found more disparity between clinical and radiological signs in this group than in any other. No clinical signs were discovered in 4, yet 3 of these showed "hazy" opacities affecting one or more lobes. In only 4 of the 12 was there any close agreement between physical and X ray findings. The reason for this disparity is the absence of any dense consolidation; it is patchy, and more peripheral than central. When a consolidation is lateral and peripheral there is still a good deal of lung surface, both anteriorly and posteriorly, over which a reasonably good note and unaltered breath sounds are audible (Fig. XX.).

Group IV. Pneumococcal Pneumonia

Produced by a variety of non-specific pneumococci, Group IV. pneumonia, although common, is less of a clinical entity than the others. Occasionally the infection is severe, but all grades may be met with, and grading is also evident in the local phenomena; some show well-defined consolidation, while in others there is little evidence of a local lung lesion.

In this group 22 patients were submitted to periodic X ray examination. The opacity as a rule was only moderately dense and the distribution was usually peripheral. In 1 case the appearances closely resembled miliary tuberculosis; in 2 cases large cavities suggestive of tuberculosis appeared and disappeared completely during the illness (Figs. XVIII.A, XVIII.B, XIX.A, and XIX.B). In the majority, the height of the diaphragm remained unchanged. The glands enlarged as resolution commenced, as in the other types. Resolution was complete in some cases as early as the fourteenth day; the average, however, was the thirtieth day.

There was close agreement between clinical and radiological findings when the consolidation was dense, but when it was patchy and hazy the physical signs were as inconclusive as in Type III. infection. In 12 of the cases consolidation was hazy, while 6 showed more extensive radiological signs of involvement than was suggested by clinical examination.

In some of this group resolution was extremely rapid. One patient, a man aged 20, who showed a crisis on the fourth day, had considerable enlargement of the hilar glands, and resolution was complete by the eleventh day. In 6 in whom the hilar glands were greatly enlarged resolution was complete by the fourteenth. On the other hand, resolution was not complete until the thirty-sixth day in a young woman aged 20, and the only apparent explanation of the delay was the absence of any hilar enlargement (Figs. III.A and III.B).

Empyema developed in 2 of this group, and in both of them pus was aspirated on clinical evidence before any change could be seen in the X ray films.

The Heart in Pneumonia

Frequent radiography enabled us to keep close watch for changes in the heart during the illness, but in our whole series of 119 we found only 3 patients in whom there was any definite change in its size. Some films showed a prominent pulmonary cone, but we do not consider this change significant.

We believe that cardiac enlargement during pneumonia is rare, but when it occurs it must be recognised as a sign of myocardial damage, even if only temporary. The three cases deserve a brief description.

1. A boy aged 15, suffering from a Type I. infection with a left lower lobe consolidation. He showed high fever and a respiratory rate of over 40, but his pulse-rate never exceeded 80. The pulse was dicrotic in character, and the blood pressure 80/50. The pulse-rate fell to 50 on the seventh day and gradually quickened to 70 on the fourteenth. The B.P. also rose to 115/70 when convalescence was established. During the acute phase of the illness it was recognised that the boy was in a very toxic state, and he also showed an absence of leucocytosis. His transverse cardiac measurements were:

Day.	Cm.	Day.	Cm.
5th	11	10th	14·5
7th	14	14th	11

2. A man aged 37, with a Type I. infection of the left lower lobe. He was admitted on the seventh day of his illness with a temperature of 102·4° F., a pulse of 128, and a respiratory rate of 36. The blood pressure was 98/70. He was not seriously ill. Crisis occurred on the eighth day and recovery was apparently rapid. The pulse, however, fell rapidly. It registered 60 on the ninth day, 52 on the fourteenth, and 50 on the seventeenth. The cardiac measurements were:

Day.	Cm.	Day.	Cm.
7th	14·6	14th	13·5
9th	14·0	19th	12·7

3. A man aged 25, with a Type I. infection involving the right lower lobe and left base, severely ill and treated with Felton's serum. Crisis occurred on the fourth day. On admission on his first day of disease the temperature was 104·6° F., the pulse 140, and respiratory rate 40. The blood pressure fell to 88/60 on the fourth day, to rise to 110/80 following the crisis. The pulse was 80 on the fifth day, and records between 50 and 60 were obtained during the following ten days. The cardiac measurements were:

Day.	Cm.	Day.	Cm.
2nd	14·2	15th	14·7
4th	15·7	21st	14·5
6th	16·0	24th	12·9
8th	15·2		

These were moderately severe cases of pneumonia and they had no clinical *symptoms* suggestive of cardiac disability. In all three, however, there was a relative bradycardia—in one at the height of the fever, and in the other two following the crisis—and in all three a systolic pressure below 100 was recorded. The increase in cardiac diameter was 3·5, 1·9, and 3·1 cm. respectively.

Levy[32] in 1923 found that the heart shadow enlarged during convalescence in two of his pneumonia patients; these were also examples of pronounced post-febrile bradycardia. These findings suggest "that bradycardia under these conditions is a sign of cardiac exhaustion, even though the rhythm is normal" (Levy). We have since observed this condition in another patient who remained very listless and ill for four days after a pneumonic crisis. There was nothing in the lungs to suggest a cause for the symptoms, but we recognised the potential danger of a post-febrile bradycardia (56) and a blood pressure of 90/60. With "absolute" rest the patient made a gradual recovery.

From these few examples we deduce that bradycardia during or following pneumonia is suggestive of some myocardial involvement; and if this finding is accompanied by a systolic blood pressure below 100, it should be a warning of the necessity for the utmost caution. This is probably the type of patient who (rarely, it is true) dies tragically and suddenly when allowed up too soon during convalescence.

General Discussion

The important questions for discussion are: (1) Does radiology throw any light on the development of the pneumonic lesion? and (2) Is it of practical assistance in diagnosis and treatment?

There is little doubt that the central mode of spread—i.e., a rapid extension of consolidation from the hilum—is the commoner form of the pneumonic process, and in pneumonia of Types I. and II. it was certainly the usual one. On the other hand, in Type III. and Group IV. infections a peripheral focus with subsequent extension towards the hilum was not uncommon.

The rapidity with which a lobe becomes consolidated can be appreciated with the help of radiology. Thus a radiogram taken on the second day of the disease sometimes shows a dense shadow occupying the position of a whole lobe; and Terrell, Robertson, and

Coggeshall investigating experimental pneumonia in dogs found dense consolidations even within the first twenty-four hours. It is indeed difficult to obtain a large collection of clinical material demonstrating the very earliest changes. In the dog it has been noted that when consolidation progresses rapidly there is usually some mediastinal displacement. We found one such case in our human series whilst Graeser, Wu, and Robertson record 3 in a series of 40. Narrowing of the intercostal spaces and a elevation of the diaphragm are commonly seen when there is dense consolidation, and these findings suggest that some degree of lobar collapse, in addition to an acute infection, plays a part in forming the picture we know as lobar pneumonia. The quicker the consolidation the more likely is lobar collapse. Unfortunately our observations do not provide absolute evidence of such collapse; but we are satisfied from the indirect evidence described above that it is operative in certain cases. It is hard to see why infection should so often be limited to a single lobe unless there is some mechanical factor which suddenly makes it vulnerable.

It is sometimes important to make a diagnosis of lobar pneumonia with the utmost speed. A patient with high fever may show inconclusive local physical signs, and if serum treatment is contemplated a decision must be reached at once. Radiography 24–48 hours after the onset should show unmistakable signs if pneumonia is present.

Under various headings we have shown that the consolidation seen with X rays is often more extensive than would be supposed from the physical signs. At post-mortem, too, it is usually well in advance of bedside prophecy. An upper lobe consolidation seems to be the most elusive, and in many of our patients radiography showed lesions in this situation of which there was little evidence clinically. We have also been impressed with the frequency of pneumonia affecting more than one lobe: thus in our Type I. series 16 out of 37 showed abnormality in an adjacent lobe or in the opposite lung, although in only 3 of them we had been able to find signs of more than one lobe being involved. It must be admitted that more than half these 16 cases showed radiological lesions of only portions of other lobes, and there is no doubt that where consolidation is well established and shows on a film as a dense discrete shadow, physical examination is as capable as X rays of delineating the outline of the lobe; small extensions and early extensions, however, are far more easily and accurately discovered by radiography than by clinical methods.

Types I. and II. infection proved the most uniform in their lobar distribution and usually furnished a dense opacity. The greatest variation in spread and density was encountered in Type III. and Group IV. infections. The peripheral form of consolidation, especially in its earliest stages, was associated with indefinite and inconclusive physical signs, and our clinical assessment of the extent and locality of the infection is seen to be especially poor—and inferior to radiography—in Type III. pneumonia. As Mason has pointed out, signs may be absent in "peripheral" consolidation until it has extended to the hilar region.

The rate of resolution of consolidated lung varies considerably; in some patients the lung is normal to all appearances as early as the fourteenth day, whereas in some there is delay up to the fiftieth. In our cases resolution was ordinarily complete by the twentieth day, but generally speaking the older the patient the slower was the process of clearing. In multilobed infections one lobe might be showing rapid resolution while another showed increasing consolidation. Enlargement of the hilar glands was commonly associated with rapid resolution; calcified glands, on the other hand, often meant delay.

The opacity of the consolidated lobe begins to clear at the periphery, and the process gradually extends inwards until the last portion near the hilum becomes translucent. In the course of resolution many peculiar pictures may be obtained: several of our patients showed small "cavities," which gradually thinned out and eventually disappeared, and false deductions might quite easily have been drawn if single films had been taken. It is interesting to note that Terrell, Robertson, and Coggeshall found similar "cavities" in the resolving lung of the dog; they were able to show that these were due to dilated atria or air sacs—the dilatations tending to persist longer than the other changes in the consolidated lung.

In the early diagnosis of empyema radiological signs are inferior to physical signs, and in three of our cases pus was aspirated from the pleural cavity on clinical grounds before any change was demonstrable in the X ray films. In our cases empyema was always a sequel to consolidation so dense as to be unaltered by the presence of a thin layer of pus in the pleural cavity.

Cardiac enlargement has been found as a complication of only 3 cases, and in all of these it was accompanied by a relative bradycardia, a sign which fortunately is easily recognised.

The effect of serum treatment was closely observed, but we are unable to show any "abortive effect" on the process of consolidation, even though the constitutional symptoms and signs were greatly reduced, and an early crisis was precipitated. It is, of course, possible that the use of serum prevented further extension of the pneumonia.

We wish to acknowledge our indebtedness to Lord Dawson of Penn and the Royal College of Physicians of London for the facilities and grant enabling us to prosecute this study. We also wish to record our thanks to Sir Frederick Menzies and Sir Thomas Carey Evans for permission to make the investigation at Hammersmith Hospital; to Dr. Arthur Morris, Dr. Bevan Jones, Dr. F. T. J. Hobday, and Dr. C. D. Porter for their active and willing coöperation; to Dr. F. Lee Lander and Dr. Ursula Shelley for assistance in analysing the records kindly supplied by the Middlesex and Royal Free Hospitals; to Mr. S. R. M. Busby, senior technician of the Bland-Sutton Institute, for his ready help at all hours of the day or night; to Dr. Stanley White, of Messrs. Parke, Davis and Co., for making possible the purchase of serum; to Dr. R. A. O'Brien and Dr. H. J. Parish, of the Wellcome Research Laboratories, for much advice as well as supplies of material; to Mr. J. M. Kenny and Mr. Stephen Smith, who assisted with the development of the films; to Messrs. Newton and Wright for erecting and lending the necessary X ray apparatus; and to Messrs. Ilford for the reproduction of the films.

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HOSPITAL EXTENSION AT BRISTOL.—The Lord Mayor's Hospitals Extension Fund committee at Bristol have started a house-to-house collection in connexion with their efforts to raise £250,000 for alterations and additions to the voluntary hospitals.

EXPERIMENTAL HYPERPLASIA OF THE PROSTATE

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BEIT MEMORIAL RESEARCH FELLOW

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THE first knowledge of possible endocrine factors underlying abnormal prostatic enlargement has been provided by recent work on the effects of gonadal hormones on the prostate of rodents. The available data suggest that it is not the male hormone, but the so-called "female sex-hormone" œstrin, which may be concerned in this condition. It has been clearly demonstrated (Lacassagne, 1933) that relatively large amounts of œstrin (500 mouse units per week over periods of five months) will produce considerable growth of the dorsal prostatic lobes of the mouse, and that retention of urine and hydronephrosis develop as a result. The initial response of the mouse prostate to such treatment consists of reduction in the number of glands in the dorsal lobes; the glandular cells do not begin to multiply until about four weeks after the beginning of injections. Cornification later sets in, and the alveolæ become greatly distended with keratinised epithelial debris and leucocytes. Lacassagne's observations have been independently confirmed in detail by Burrows and Kennaway (1934), while David, Freud, and de Jongh (1934), and Korenchevsky and Dennison (1934) have demonstrated an increase in weight of the prostate of the castrated rat as a result of œstrin injection.

Recently we have reported in abstract on changes produced by œstrone in the prostate of the rhesus monkey, *Macaca mulatta*, and the Guinea baboon, *Papio papio* (Parkes and Zuckerman, 1935). Almost simultaneously with this publication of our findings, which are described below in more detail, Courrier and Gros (1935) published a short account of similar observations on the Barbary ape, *Macaca inuus*.* Owing to the anatomical similarity of the monkey and human prostates, a valid comparison can be made of the response of the former to œstrone with the clinical condition of prostatic hypertrophy.

TABLE I.—*Control Monkeys*

No.	Autopsy weight (kg.).	Approx. age (years).	Utricular epithelium (layers).
MM 2	5·3	4-8/12	1–2
9	2·7	2-6/12	2
11	3·5	3-3/12	2
17	3·5	3-1/12	2
22	—	2-2/12	2–3
23	1·8	1-8/12	1–2
27	2·7	2-8/12	1–2

MATERIAL

A list of the monkeys used in the present study, together with relevant details, is given in Tables I. and II. Estimates of age are based on body-weight and dentition (Schultz, 1933). All the animals were immature. MM 13 and 22 were Guinea baboons, *Papio papio*, and the remainder were rhesus monkeys, *Macaca mulatta*.

TABLE II.—*Monkeys Receiving Œstrin*

No.	Weight at start of exper. (kg.).	Approx. age (years).	Days injected.	Total œstrone injected (mg.).	Utricular epithelium (layers).
MM 1	4·3	3-7/12	6	30·0	5–6
12	4·3	4	6	30·0	4–5
13	4·4	2-2/12	6	30·0	8–16
14	3·9	3	6	15·0	2–8
15	4·1	3-1/12	6	30·0	2–3
16	3·5	3-4/12	6	6·0	3–5
18	4·8	4	28	5·6	15–25
19	4·8	4	28	28·0	15–25
20	1·8	1-3/12	6	30·0	3–6
25	1·7	1-3/12	7	1·4	2–5
26	2·5	2-6/12	16	16·0	10–15

The animals were injected once daily, for periods varying between 6 and 28 days, with an oil solution of crystalline œstrone (ketohydroxyœstrin), for which we are indebted to the British Drug Houses Ltd. This

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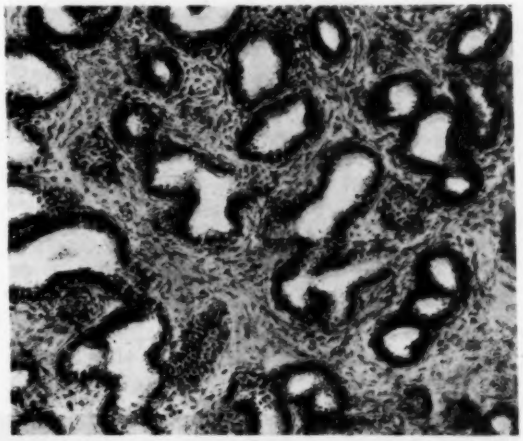

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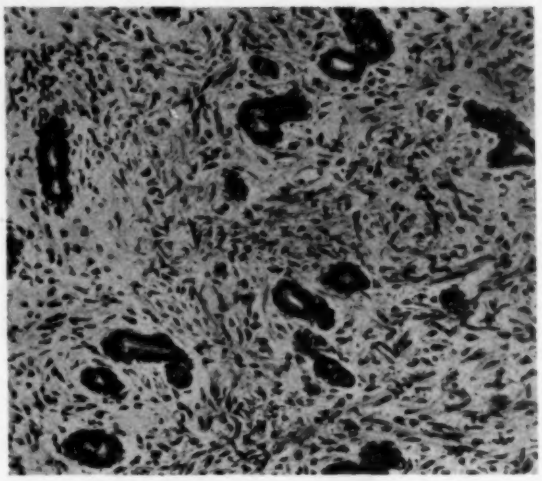

FIG. 1.—(A) Prostatic glands and stroma of normal rhesus monkey (MM 2, see Table I.). × 142. (B) Prostatic glands and stroma of rhesus monkey after injection of œstrone (MM 1, see Table II.). × 142.

* We are informed, in a personal communication, that similar observations, as yet unpublished, have also been independently made in the United States by Dr. G. van Wagenen.

treatment caused œdematous swelling of the external genitalia and surrounding regions (viz., anus, base of tail, lower part of back, posterior aspects of thighs). A detailed account of this external response of the male has recently been given by Bachman, Collip, and Selye (1935). The swelling never became large enough to cause retention of urine. Autopsies were performed one or two days after the last injection.

THE NORMAL MONKEY PROSTATE

The following description of the normal immature rhesus prostate, which in structure is essentially the same as the human, is based on a study of the control series.

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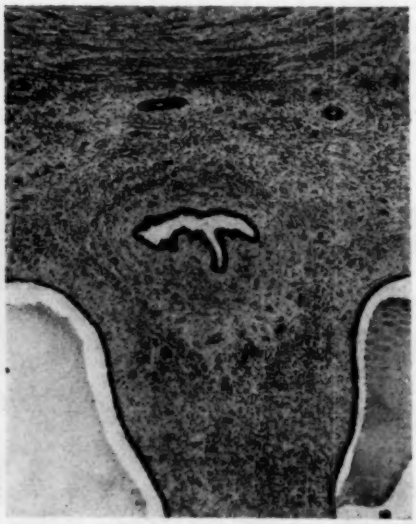

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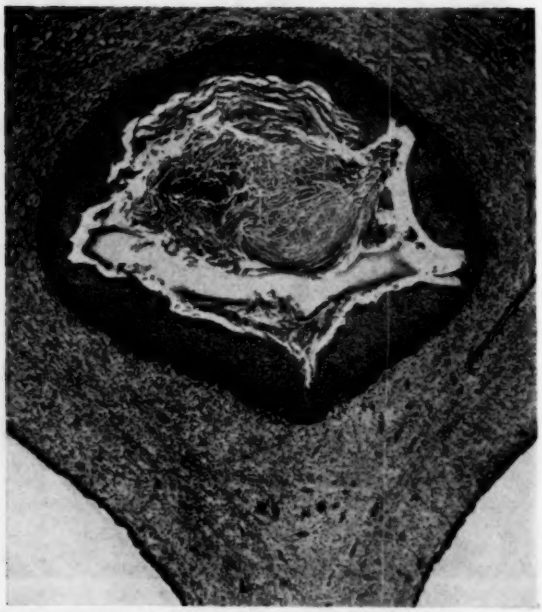

FIG. 2.—(A) Utricle of normal rhesus monkey (MM 11, see Table I.). × 29. (B) Utricle of rhesus monkey after injection of œstrone (MM 18, see Table II.). × 29.

The prostate is a compact glandular organ except in its cranial third, which is broken up into a series of separate lobules, some of which intervene between the muscular coat of the urethra, and the ducts of the seminal vesicles and vasa deferentia. The common ejaculatory ducts are formed about the middle of the cranial half of the prostate, and pass into the urethra on either side of the crista urethralis about the middle of the caudal half of the organ. The utriculus masculinus opens at about the same level. The utricle terminates cranially in the lobulated part of the prostate, and except at its extremities its transverse lumen projects dorsally in the midline in the form of a narrow slit. The prostatic glands do not completely encircle the urethra, as they do in man; the urethra transverses a groove on the ventral surface of the prostate.

The numerous prostatic glands are narrow, tubular, and branched, and lined by a single (occasionally double) layer of columnar cells with relatively large, basal nuclei. The basement membrane is generally well defined. The glands are more widely open, and the epithelium more regular and more obviously secretory, in the older than in the younger specimens. The collecting ducts generally have a double layer of epithelium. Those of the caudal glands ascend, and those of the cranial descend, to open into the urethra near the cranial part of the crista urethralis. They do not open into either the ejaculatory ducts or uterus masculinus, both of which are isolated from the rest of the prostate—and to some extent from each other—by fibromuscular tissue. The glands lie in a stroma of tightly packed collagenous fibres and plain muscle.

The epithelium of the ejaculatory ducts is composed of moderately tall columnar cells, frequently two layers thick, with relatively large nuclei filling the greater part of the cell bodies. In places, where the ducts are distended, the epithelium is much flattened.

The uterus masculinus is lined by low cuboidal epithelium, one to two layers deep in the rhesus monkeys, and two to three in the Guinea baboon. Its lumen is generally small and empty, especially in the dorsal projection, which may be represented by only a cord of epithelium. In specimens MM 2 and MM 9 the utricle contained a homogeneous eosinophil coagulum in which were embedded some cast-off epithelial cells and leucocytes. The stroma of the utricle is less fibrous than that of the rest of the prostate.

EXPERIMENTAL RESULTS

The significant prostatic changes in the experimental animals comprise (*a*) growth of the utricular epithelium and (*b*) reduction in the size and number of the prostatic glands, with a corresponding increase in the amount of collagenous fibrous tissue. Unlike Courrier and Gros (1935), we were unable to detect with certainty any gross enlargement of the prostate as a whole.

Uterus masculinus.—In the animals injected for 6 days the utricle has responded very rapidly to œstrone, the number of layers of epithelium increasing to as many as five times the normal. Mitoses are numerous. The growth is irregular, and the superficial cells are soon shed. Epithelial growth becomes more pronounced as the injections continue, and the basal cells become highly chromophilic like the corresponding cells of the normal vagina. In MM 18 and MM 19 the epithelium is in places as many as 25 layers deep, the more superficial layers being cornified. The lumen of the utricle is distended, appearing circular in cross-section, and is filled with epithelial debris and leucocytes, which can be seen passing through the epithelium from the stroma. The process of distension effaces the normal T-shape of the lumen. The cells surrounding the utriculus appear more numerous and better defined in some of the injected than in the normal monkeys, and there is a suggestion of increased vascularity.

There is a single utricular "gland" in the Guinea baboon, MM 13, but in the absence of adequate control material for this species, it cannot be regarded as an effect of the injections. A presumably specific character exhibited by the Guinea baboon is a very widely dilated prostatic

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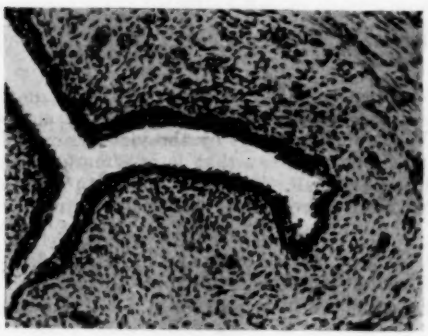

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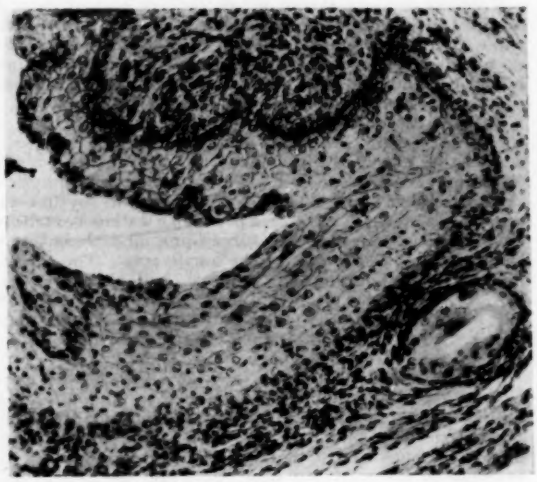

FIG. 3.—(A) Utricle of normal Guinea baboon (MM 22, see Table I.). × 142. (B) Utricle of Guinea baboon after injection of œstrone (MM 13, see Table II.). × 142.

urethra. Irregularities in the utricular epithelium of the rhesus monkey MM 15, suggest incipient "glandular" budding, yet the utricular response of this animal was the poorest in the experimental series. The sensitivity of the animals to œstrone appears to vary greatly, and larger doses do not seem to be necessarily more effective than smaller amounts. Different regions of the utricle also show different degrees of response.

Prostatic glands and stroma.—The prostatic glands are reduced in number in most of the experimental animals, the chief exceptions being the oldest members of the group, MM 18 and 19, in whom they are more or less normal as compared with a control animal of approximately the same age. The glands also tend to be narrower, and they are frequently seen in section as solid cords of cells. The manner in which their number is reduced is by no means clear. The glandular epithelium is generally healthy, and epithelial degeneration was observed in only one case. The narrow glandular lumen in the experimental animals is suggestive of increased stromal pressure, and it seems that the glandular involution may be more apparent than real.

DISCUSSION

The most striking effect of œstrin on the rhesus prostate is the utricular response, which is strictly comparable with the vaginal reaction to œstrin. Since the vagina and uterus masculinus may have a similar embryological origin (Meyer, 1909; Vilas, 1933), and since the utriculus of the rhesus monkey is certainly "vaginal" in appearance, this finding cannot be regarded as surprising. The occasional vestigial remains of a Müllerian duct in male fowls have also been shown to be responsive to œstrin (Juhn and Gustavson, 1932), and it has been argued that the epithelial response to œstrin of the dorsal lobes of the mouse and rat prostate indicates that these lobes, which are usually regarded as being coagulating glands, are also derivatives of the Müllerian ducts (Lacassagne, 1933; Burrows, 1934). Unfortunately embryological evidence on this point is lacking. It may be noted in this connexion that while there is no utriculus masculinus in the adult mouse, such an organ has been described as occurring in the new-born (Hütt, 1926).

The evidence clearly indicates that œstrin is able to exercise a specific epithelial effect on rudimentary structures in the male which are derived from the embryonic uterovaginal canal. The apparent reduction in the number of true prostatic glands, which are derived from the urogenital sinus, and the corresponding increase in the amount of prostatic fibromuscular tissue, which all observers are agreed originates from the musculature of the genital canal and urogenital sinus, may be regarded, in view of Freud's (1933) clear findings, as part of the general effect of œstrin on the smooth muscle of the accessory reproductive organs.

Coagulating glands, such as occur in the mouse and rat, are not represented in man and, therefore, in spite of the superficial similarity of the urogenital effects of œstrin in the male mouse to the clinical syndrome of enlarged prostate in man, the experimental condition in the rodent cannot be expected to shed direct light on the ætiology of the human disease. On the other hand, our findings on the monkey may have some bearing on this problem. A uterus masculinus is present in all men (Vintemberger, 1926), and the human male undoubtedly elaborates and excretes an œstrogenic substance. In the circumstances, it seems likely that the human prostatic utricle must be regarded as a potentially active organ.

Since the utricular response in the rhesus monkey and Guinea baboon is purely vaginal in character, it bears little resemblance to the glandular hypertrophy characteristic of prostatic enlargement in man. The glandular nature and general "uterine" appearance of the utricle in certain other primate species, including man, suggests, however, that in them it may include a uterine as well as a vaginal component, a possibility which can neither be established nor excluded on the available embryological evidence (see Zuckerman and Parkes, 1935). If the utricular glands, where present, are true homologues of uterine glands, their response to the unopposed action of œstrin should be cystic hyperplasia, such as takes place in the female primate in similar circumstances (Kaufmann, 1934; Zuckerman and Morse, 1935). If such a response occurred in the male, the histological appearance would be that of glandular hyperplasia of the prespermatic lobe of the prostate where, according to many investigators, prostatic enlargement may originate (see Marion, 1923). We are at present extending the experiments to species of monkeys in which the utricle is glandular.

Prostatic enlargement in man is essentially a disease of later life. This fact suggests that it may be associated with male hormone deficiency, and that male hormone therapy is indicated. Van Cappellen (1933) claims to have obtained good clinical results from such treatment, while according to David, Freud, and de Jongh, simultaneous administration of male

hormone prevents the metaplasia and cornification of the mouse prostate caused by œstrin injection, but it is difficult to understand the mechanism of such a result. If, however, prostatic enlargement in man depends wholly, or in part, on hyperplasia of the utriculus masculinus under the influence of œstrin, there would be other possibilities of therapy. There is good evidence that the effects of œstrin are suppressed by the simultaneous administration of progestin, the hormone of the corpus luteum (Smith and Smith, 1931; Allen and Meyer, 1935). According to Smith and Smith this is due to the fact that progestin stimulates the excretion of œstrin. It is possible, therefore, that the effect of œstrin on the male could be diminished or even prevented altogether by the administration of progestin.

SUMMARY

Ten immature male rhesus monkeys, varying in weight from 1·7 to 4·8 kg., and one immature Guinea baboon, were injected daily, for periods of 6 to 28 days, with an oil solution of œstrone. The total amount injected varied between 1·4 mg. and 30·0 mg. Six normal rhesus monkeys and one Guinea baboon of equivalent weights were used as controls.

The injected series showed pronounced prostatic changes, comprising (*a*) diminution in the number of true prostatic glands, with a corresponding increase in the amount of fibromuscular stroma; and (*b*) epithelial growth in the uterus masculinus. The latter change is very conspicuous, and the utricle acquires a large distended lumen lined by as many as 25 layers of stratified epithelium. The significance of these results to the problem of pathological prostatic enlargement in man is discussed.

The cost of most of the animals was defrayed from a grant to S. Z. from the Medical Research Council.

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PUTNEY HOSPITAL.—Prince Arthur of Connaught presided over the annual meeting of Putney Hospital where extensions are to be opened on April 30th by Princess Arthur. Ten new paying wards have been built, the out-patient department has been reconstructed, and a new mortuary and chapel have been given. Offices for the matron and the almoner, a new massage department, a casualty ward, and a suite of rooms for the resident medical officer have also been added.

EMBOLISM OF THE CORONARY ARTERIES

BY A. S. HOSEASON, M.D., M.R.C.P. Lond.

CORONARY embolism is extremely uncommon; the probabilities are so strongly against an embolus of suitable size being swept by the violent aortic stream into a coronary artery that it is remarkable that it should occur at all. The following is an account of a case with references to the scanty literature.

CASE REPORT

The patient, a well-built and muscular male of 36, was brought into hospital one morning at 8.30, having collapsed in the street at 8.15. He said that while proceeding to work and feeling perfectly well he had suddenly been seized with the most intense pain in the chest and across the shoulders. He vomited and collapsed.

Previous history.—About a year before he had been in hospital with cellulitis at the back of the neck, and a little while later with lymphadenitis in that area. He had had no malaise or dyspepsia or definite illness lately; he had in fact been in good health. There was no history of acute rheumatic fever.

Physical examination.—The patient was obviously in considerable pain, but apart from this was not dyspnœic, nor was he cyanosed; there was no smell on the breath. The temperature was 97° F. The only abnormal physical signs were a slow pulse, rate 60, but regular in rhythm and of moderate tension; the area of cardiac dullness extended outwards to the left to the nipple line, and there was a localised systolic murmur in the aortic area. The cardiac impulse was about normal in force, and there were no thrills. There was no abdominal tenderness or rigidity, and examination of the chest and central nervous system was negative. As is said, there were no abnormal signs beyond those described above.

Diagnosis.—It will be seen that tentative theories as to perforation of a peptic ulcer, spontaneous pneumothorax, a tabetic crisis (and even Nothnagel's syndrome) were not supported by the findings. Occlusion of the right coronary artery was suggested, more fancifully than seriously, on the evidence of the pain, the slow pulse, and the lack of any other likely diagnosis.

The patient continued in much the same state up to 9.55 A.M., when he suddenly became blue and died.

Post-mortem.—External appearances were normal except for marked general cyanosis. *Lungs and pleural cavity:* normal. *Pericardial sac:* no excess of pericardial fluid. *Heart:* milk-spots on epicardium. Weight, 14 oz. Left ventricle considerably enlarged (concentric hypertrophy). Right auricle and ventricle and great veins distended with dark, unclotted blood. The myocardium appeared healthy. The aortic valves were sclerosed and partly calcified. The other valves were normal. On the right (posterior) aortic cusp was a small thrombus loosely attached to an ulcerated area over a calcified nodule. Half an inch along the right coronary artery was a small soft clot, about ¼ in. long and ⅛ in. thick—presumably a vegetation derived from the ulcerated valve cusp. *Liver and kidneys:* intensely congested; bladder empty. Pancreas and spleen congested. *Stomach:* mucosa very congested; a small quantity of partly digested food. *Brain:* excess cerebrospinal fluid and slight dilatation of the ventricles.

An interesting contrast was provided by the normality of lungs and the congestion of the other viscera. The explanation lies in the situation of the embolus producing, so to say, an acute "half heart" failure. The distribution of the right coronary artery includes the right auricle, most of the right ventricle, and the posterior part of the interauricular and interventricular septa, where the auriculo-ventricular node is situated, and the bundle of His runs (Walmsley,[1] Gross [2]). The junctional tissues are but poorly vascularised at the best of times, and it has been said

(Gross) that the myocardium of an elderly person is better prepared for coronary occlusion than that of a young man. A sudden failure of the right side of the heart would affect and produce congestion only in the venous circulation and therefore in viscera other than the lungs.

Judging by the sequence of events the obstruction must at first have been incomplete, the embolus probably lying across the mouth of the coronary artery, until at 9.55 A.M. it was forced into the lumen of the artery and the obstruction became complete. The slow pulse was caused by defective conduction in the junctional tissues, probably a 2 : 1 block. An idioventricular rhythm is possible at the high rate of 60, but this is not likely as the man had not fainted (from cerebral anæmia during the pause before his ventricles "took over").

LITERATURE OF THE SUBJECT

The literature of the subject makes interesting reading. O. Saphir [3] collected and analysed the cases known up to 1924, 11 in all, and also gave the details of 3 cases of his own. It appears that Virchow, in 1856, first described coronary embolism in an autopsy on a case of recent endocarditis in a young woman. She had an universal systemic embolism, with several small emboli in her myocardium which, however, were not of any great importance in her general clinical condition. Discussing autopsy reports, Saphir emphasises the point that cases described without evidence of the origin of the embolus should be considered not proven.

After 1924 cases are recorded more frequently.

Jacobi, Kenler, and Silverman[4] had a notable case of paradoxical embolism, in which the patient died 15 minutes after the onset of pain in the chest. An autopsy was performed two hours later, and the following is an extract from their report: "On opening the thoracic cavity, several complete auricular contractions were observed, tapering off into fibrillary twitchings of the left ventricle, while the lungs rapidly deepened in red color and the abdominal veins and pulmonary artery became visibly distended with venous blood." The embolus was found in the left coronary artery, and was derived from a femoral thrombus, having gone through a patent foramen ovale. There was also an infarct in the left kidney, and the lungs, although congested, were not œdematous. It is quite remarkable that the heart of a person (presumably) dead two hours should yet be able to generate beats of a sort. It is of considerable importance to note that a left-sided embolus, causing a failure mainly left ventricular until the heart as a whole became disorganised, should be seen to produce congestion in the lungs, this being in contrast to my case in which the failure was right-sided.

Chevalier Jackson and Babcock[5] reported coronary air embolism during a thoracic operation. The patient died very quickly, and when the heart was looked at bubbles of air were seen in the superficial coronary vessels. They suggest, as a counsel of perfection, that when air embolism occurs, the air should be aspirated with a hypodermic needle and syringe.

The artery most commonly blocked is the anterior descending branch of the left coronary. The embolus is usually a vegetation derived from an ulcerated valve. It is for this reason, as compared with coronary thrombosis, that the victims are relatively young. Death occurs fairly soon after the embolism and is often associated with irregularities in the heart-beat, though in some cases the end is delayed for a few hours.

Experimentally (Rukstinat[6]) it was found that dogs with coronary air embolism died promptly, with ventricular fibrillation. If death did not immediately occur, then the air was absorbed and the dogs recovered. Death was less likely to occur if the air was prevented from reaching the brain by ligating the carotids. In other experiments F. M. Smith[7–9] found that if both main branches of the left coronary were tied, death resulted instantly from ventricular fibrillation. When only one of the main branches was tied serious results did not invariably occur, while if the right coronary was ligated about half the dogs survived for shorter or longer periods. During these experiments he took electrocardiograms and obtained the characteristic Pardee curves. Kaufmann reports absence of demonstrable change in the myocardium even seven hours after the ligature.

The *diagnosis* of the condition is obviously much the same as in coronary thrombosis, except that the syndrome is more frequent in young adults and so is not likely to be thought of. Its possibility should always be borne in mind in cases of ulcerative endocarditis and femoral thrombosis; in the latter condition it should form part of the differential diagnosis from pulmonary embolism. The presence of an irregular or slow heart action is of importance. A further stage in the diagnosis is attempting to locate the embolus. In connexion with coronary occlusion in general, Hamman,[10] in a very comprehensive essay on its symptomatology, gives the opinion that it is impossible to locate the site of the occlusion, that is, without the aid of the electrocardiograph. He points out the great variation in symptoms that follow apparently similar accidents. "To mark the extremes it is sufficient to note that the same accident may in one instance be followed, or rather accompanied, by instant death, whereas in another it may pass unnoticed and only later be accidentally discovered." Also, that since occlusion of a coronary artery may cause mural thrombi in either ventricle, one cannot say, for example, that a pulmonary embolus, coming from the right ventricle, is necessarily caused by a right coronary lesion. There is in addition the possibility of paradoxical embolism.

I should like, however, to make the following observations. The majority of coronary occlusions affect the descending interventricular branch of the left coronary artery—that is, mainly the left ventricle—and so the recognised symptomatology is that of an acute left heart failure syndrome. But if the blood pressure is not much affected and the lungs show no evidence of passive congestion, then one might reasonably deduce that the right, not the left, coronary was blocked. This would be supported by the appearance of venous congestion and also by any evidence of heart-block. In the case I have described, it was the slow and regular pulse that suggested the diagnosis, and it will be remembered that at the post-mortem there was no sign of congestion of the lungs, while in the case of Jacobi, Kenler, and Silverman, a left-sided embolism, the lungs were actually observed to deepen in red colour. In search of support for this suggestion, that main bundle block is likely to occur with right coronary lesions, I examined the electrocardiograms reproduced by F. M. Smith. Unfortunately he did not seem to have investigated the subject of main bundle block, being concerned chiefly with variations in the Q R S complex and T-wave. Also, none of the electrocardiograms were of right coronary lesions, but it is an important point that in the many left-sided lesions shown there was no evidence of main bundle block. There was only one electrocardiogram which was at all helpful; this was of a man (case 3, paper 3 [9]) with a very characteristic right bundle branch block, in whom a thrombosis was found at autopsy. Which artery was affected was not specified, but the evidence favours the right. The picture showed a very prolonged P–R interval. There must be many electrocardiograms of experimental ligature of the right coronary which have not been reproduced because they were not thought to be of sufficient interest. I feel that it would in fact be of considerable interest to have this point cleared up.

There still remains the problem as to why coronary embolism is so rare relative to embolism elsewhere, in spite of the fact that the coronary blood flow is high in comparison to that of other organs. Thus it has been estimated that during exercise the minute flow is as much as 1·4 litres (Samson Wright).[11] At rest the minute volume is approximately 0·2 litre—that is, about a twentieth part of the total minute circulation volume, and yet systemic embolism is disproportionately more common. An important factor, no doubt, is that the rush of aortic blood sweeps any loose fragment well past the coronary openings which will be more or less masked by the aortic valve cusps. Also, the coronary circulation is unique in that it fills during diastole. A clot which has been dislodged probably some time during systole will have passed well out of the way by the time the coronaries commence their diastolic filling from the residue of blood in the aorta.

I wish to thank Dr. H. O. West, medical superintendent of St. Giles' Hospital, for his permission to publish the above case.

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CULLEN'S SIGN IN RUPTURED ECTOPIC GESTATION

WITH A REPORT OF TWO CASES

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AND

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In 1919 T. S. Cullen, of Baltimore, described the occurrence of a discoloration, resembling a bruise, at the umbilicus of a patient with a ruptured ectopic gestation. The patient, a thin woman of 38, gave a history of three weeks' lower abdominal pain. There had been no menstrual abnormality. One week after the onset of the pain the umbilicus had suddenly become bluish-black, but when seen by Cullen the discoloration resembled a fading bruise. There was no umbilical hernia. Having previously read Ransohoff's description (1906) of localised jaundice of the umbilicus, in a patient with a ruptured common bile-duct, Cullen made a correct pre-operative diagnosis of a ruptured ectopic gestation.

We have recently observed two cases, each of which showed a similar discoloration in association with a ruptured ectopic gestation. In the earlier case the discoloration was at the site of an appendicectomy scar, but in the later case, which occurred whilst this paper was in preparation, the discoloration was at the umbilicus.

THE FIRST CASE

Mrs. A. B., aged 47, housewife, was admitted to hospital on Sept. 23rd, 1934, with lower abdominal pain. Twenty-three years ago—first child, normal pregnancy. Twenty years ago—three months' abortion, in bed two weeks with fever. No operation. Informed by doctor that further pregnancies were unlikely. Five years ago—appendicitis. Battle's incision, appendicectomy with drainage. No further pregnancies. General health good. Menstruation regular, 3 : 28, accompanied by slight pain in the left iliac fossa.

Four weeks before admission menstruation occurred at expected time but bleeding was unusually profuse and accompanied by severe pain in the hypogastrium and right iliac fossa. Vaginal hæmorrhage continued every day for three weeks, varying in amount and accompanied intermittently by pain. Bleeding ceased and no pain occurred for three days. The patient did not remain in bed. Five days before admission the patient "did some washing" and the pain became severe and frequent in both iliac fossæ. During the next night the patient had a sudden severe pain, and on the following morning was very surprised to notice a "bruise" in the appendicectomy scar. The presence of the "bruise" led to her consulting a doctor. No further vaginal hæmorrhage occurred. The pain was less until the day of admission, when it began to increase and also to occur in the sacral region. The "bruise" had begun as a blue discoloration. The patient is confident that there had been no injury and she had never had a spontaneous bruise before.

On examination the patient was comfortable and gave the above history clearly. Temp., 99° F.; pulse, 108; resp., 20. The cheeks were red but the lips slightly pallid. There was a discoloration on the abdomen extending from the lower third of the Battle's incision for a distance of 3 cm., beginning as a blue spot above, continued as a thin yellow line and widening to an elliptical area 5 × 3 cm., blue in the centre, changing to yellow at the margins. The lower third of the incision had been the site of a drainage-tube but no hernia was evident then or subsequently. After catheterisation there was still a palpable swelling to the left of the hypogastrium and general tenderness of moderate severity over the lower abdomen. On vaginal examination the swelling could be palpated bimanually. The body of the uterus was not palpable. The cervix was tender and fixed in an intermediate position. There was no blood in the vagina.

Diagnosis.—Largely on the basis of Cullen's sign a diagnosis of a ruptured ectopic gestation was made, although the exact distribution of the shades of colour was difficult to explain.

Operation.—The abdomen was opened through a lower midline incision. On opening the peritoneum there was no free fluid blood, but a considerable quantity of blood clot was found in the pelvis and surrounding an enlarged left Fallopian tube. The right tube and ovary appeared normal and no direct communication could be demonstrated between the appendicectomy scar and the pelvic viscera or blood clot. The left tube and ovary were removed and recovery was uneventful. The pathologist was unable to find definite histological evidence of a gestation but the tube had evidently been the site of an early pregnancy. The discoloration faded in two weeks. The bleeding and coagulation times, and the platelet count, determined subsequently, were normal.

THE SECOND CASE

Mrs. C. D., aged 40, housewife, was admitted to hospital on Dec. 5th, 1934, with lower abdominal pain. Four pregnancies 16, 15, 12, and 4 years ago. Last normal period nine weeks before admission. Three weeks before admission—i.e., two weeks after expected time—vaginal hæmorrhage recurred. Since then there had been intermittent vaginal hæmorrhage accompanied by an ache in the lower abdomen. For the last two weeks the patient remained in bed with general malaise and weakness and without relief of pain. She noticed that she was becoming paler. There was no urinary disturbance. On the evening before admission at 11 P.M. she had a sudden onset of lower abdominal pain, chiefly on the left side, accompanied by prostration and nausea. She vomited once. The pain resembled labour pains. There was a slight increase of vaginal hæmorrhage. The patient observed that she had suddenly become much paler. On the day of admission she felt very faint. She had a constant generalised ache in the lower abdomen associated with tenderness, but no further severe pain occurred.

On examination.—Temp., 99·6°; pulse, 136; resp., 22. There was general moderately severe pallor. The tongue was moist and clean. The lower abdomen was full but moved freely and evenly on respiration. Diffuse abdominal tenderness was present, most marked in the left lower quadrant. No tumour mass could be palpated. There was shifting dullness to percussion in the flanks. Vaginal examination revealed a fullness in the pouch of Douglas and a resistance in the left fornix. The body of the uterus was not palpable. In the ward, on careful inspection of the umbilicus, a definite faint discoloration resembling a bruise was seen, starting in the umbilicus and spreading for about 3 cm. around. This discoloration closely resembled the coloured illustration given by Cullen, but would probably not have been recognised in the ward by those ignorant of the sign. In the strong light of the operating theatre the discoloration was very definite and could scarcely have escaped notice, but care had been taken to use biniodide in spirit, instead of iodine, in preparing the skin.

Operation.—The abdomen was opened through a left lower paramedian incision. On opening the peritoneum, blood clot and abundant free blood was found. The blood did not seem to have been in direct contact with the peritoneum at the level of the umbilicus. A left-sided ruptured tubal gestation was found with a six weeks embryo in its amniotic sac. The left tube and ovary were removed. The patient was given an autotransfusion of nearly two pints of citrated blood and normal saline was poured into the abdomen. The patient did well for four days but then developed severe paralytic ileus with frequent vomiting. She responded well to gastric lavage, continuous drainage through a Ryle's tube, and to injections of acetylcholine. On the tenth day she had a temporary set-back, associated with an allergic skin eruption, but subsequent recovery was uneventful and complete. The discoloration faded in about two weeks. The patient was discharged on Dec. 29th.

REVIEW OF THE LITERATURE

This sign was apparently first recorded by Hofstätter (1909) but a correct pre-operative diagnosis was not made. It is sometimes referred to as the Hofstätter-Cullen-Hellendall sign, but it was Cullen (1919) who first presented the clinical picture. In some of the recorded cases free blood was seen shining through a thin umbilicus or through the coverings of an umbilical hernia. An example of this type was seen by one of us (I. S.) in a patient with a ruptured liver and spleen. Souligoux and Laquière (1922) recorded a similar observation, the blood in this case being seen through the coverings of a femoral hernia. A diagnosis of strangulation was made as the patient had vomited and had not passed flatus, but exploration revealed a ruptured ectopic gestation with free blood. It would, we think, be convenient to reserve the term "Cullen's sign" for the type of case where the discoloration occurs in and around the tissues of the umbilicus or of an incisional scar.

The following is a summary of reported cases as far as we have been able to discover them:—

CULLEN (1918, 1919): Case described above.

HOFSTÄTTER (1909) Case 1: Lactating woman. Blue discoloration of umbilicus. Pre-operative diagnosis of strangulated umbilical hernia. Laparotomy revealed a ruptured ectopic gestation. Omentum adherent to hernia. (1922) Case 2: Ventral hernia. Permanganate colour of hernia from a ruptured ectopic gestation. (1923) Case 3: Umbilical hernia. Blue discoloration from a ruptured ectopic gestation. Cases 2 and 3 were published in 1927.

SCHMID (1923) described a case that occurred in 1913. Classical signs of a ruptured ectopic gestation. A blue colour was seen shining through an umbilical hernia. Laparotomy confirmed the diagnosis.

HANAK (1920) reported a case of intestinal obstruction occurring in 1919 in a patient who in 1915 had had a right ruptured ectopic gestation associated with a blue discoloration of an incisional hernia. The patient had been operated on for a ruptured ectopic gestation on the same side within a year previously. A pre-operative diagnosis of a strangulated hernia was made, although the correct diagnosis was entertained.

HELLENDALL (1921). Presenting symptom was a blue-green discoloration of a small empty umbilical hernia. Appearance resembled peritoneum covering free blood. The pre-operative diagnosis was a ruptured ectopic gestation. Laparotomy showed a left unruptured tubal pregnancy with free blood in the peritoneal cavity. This observation was at first thought to have been unique.

NOVAK (1922) Case 1: Classical history of ruptured ectopic gestation. Around the umbilicus there was an areola of greenish-yellow discoloration. Laparotomy confirmed the diagnosis. Case 2: Classical history and signs of ruptured ectopic gestation. A greenish-blue pigmentation was present around the umbilicus. Laparotomy confirmed the diagnosis.

JACKSON (1922): Ruptured ectopic gestation with free blood in the peritoneal cavity in an obese woman. Cullen's sign was visible only by illumination of the umbilicus in a dark room. The diagnosis was made before a vaginal examination or the laparotomy.

SOULIGOUX and LAQUIÈRE (1922): Details given above.

STRÜBE (1923): Blue coloration at the umbilicus 17 days before signs of a tubal abortion. By this time, when laparotomy showed free intraperitoneal blood, the discoloration at the umbilicus had disappeared.

PFEIFFER (1923): A blue discoloration occurred at the umbilicus seven weeks before laparotomy revealed a pelvic hæmatocele from a ruptured tubal gestation without free fluid blood.

GOLD (1926): Dark blue swelling at the upper end of a midline laparotomy scar. An associated irreducible umbilical hernia contained omentum. History of an injury to the abdomen from a stick two weeks before, in addition to a typical history and signs of a ruptured ectopic gestation. Laparotomy confirmed the diagnosis.

SOLOWJEW (1928): Observed Cullen's sign on one occasion only in over 100 cases of ruptured ectopic gestation. In his case the diagnosis was in doubt until three days after admission when a greenish discoloration appeared about the umbilicus, suprapubically and in the region of the superior anterior iliac spines. He gives an excellent coloured illustration.

FORGUE (1929): Typical Cullen's sign. Ruptured ectopic gestation. Omentum adherent to umbilicus.

LAVELL (1929): Cullen's sign observed twice in two successive ectopic gestations in one patient. He mentioned that the sign occurred rarely in a series of 410 cases of ruptured ectopic gestation.

BEHNEY (1930): Cullen's sign present in only one of a series of 167 consecutive cases of ruptured ectopic gestation.

TANNER (1932) described a case where three days after the abrupt onset of severe lower abdominal pain a discoloration began at the umbilicus and spread to the lower abdomen. The bruising was attributed by a doctor to an injury, but there was no history of this. Ten days later laparotomy confirmed the diagnosis of a ruptured ectopic gestation, with free intraperitoneal blood.

SCHMITZ (1932): Diagnosis of ruptured ectopic gestation aided by appearance of a large blood-red colour change in and around an old appendix scar. No history of trauma. Omentum adherent to scar.

ESAU (1934): A blue-coloured small umbilical hernia associated with typical skin pigmentation. Laparotomy revealed an ovarian pregnancy and adherent omentum in the umbilical hernia. Upon releasing the omentum the blue colour of the umbilicus disappeared but the pigmentary changes in the skin persisted.

STABLER (1934): Presenting symptom was a discoloration of the abdominal wall, consisting of a very dark mark one inch below the umbilicus, a separate "bruise" between the umbilicus and pubis, and a third area in the inguinal fold. The correct pre-operative diagnosis was made. Free blood was present in the peritoneal cavity from a left unruptured tubal gestation.

DISCUSSION

The occurrence of Cullen's sign in association with intraperitoneal hæmorrhage is clearly not fortuitous, but its explanation is obscure. Many theories have

been propounded to explain the phenomenon. Hofstätter suggests that the colour change in a hernia a few hours after rupture of the gestation is due to free blood seen shining through the thinned-out abdominal wall. This observation is substantiated by Souligoux and Laquière (1922), Schmid (1923), and Hellendall (1921). Where a physiological or pathological weakening of the abdominal wall is present, especially when associated with adherent omentum or bowel, blood may track to this point and become trapped, thus giving rise to the discoloration. Esau (1934), among others, supplies corroborative evidence. Hofstätter considers the possible rôle played by lymphatic channels in the transportation of blood or its derivatives to the umbilicus, especially where the omentum is adherent to the abdominal wall. Strübe (1923) is of the opinion that in some cases dilatation and congestion of the umbilical veins from anastomosis with those of the broad ligament may explain the occurrence of Cullen's sign. Forgue (1929) favours the tracking of blood along omental adhesions as the likely cause. In view of its infrequent occurrence, Stabler (1934) suggests that an abnormal break of continuity of the peritoneum may be a necessary factor.

The lymphatic mode of development is, however, usually the most probable explanation. On this hypothesis the appearance of Cullen's sign may be compared with the occurrence of nodules of carcinoma spreading to the umbilicus from peritoneal carcinomatosis. The changing shades of colour might be explained as due to oxidation of absorbed blood pigments travelling in lymphatics connecting the umbilicus with the peritoneal cavity or in abnormal lymphatic channels at the site of previous incisions.

Cullen's sign is peculiarly rare. Hofstätter saw only three cases between 1909 and 1927. Stein (1925) in a series of 106 cases and Jonas (1933) in a series of 90 did not have a single example. Its rarity has been mentioned by Behney (1930) and Lavell (1929) (see above). There is usually a history of over two weeks' lower abdominal pain and sometimes of an acute exacerbation of the pain, followed by the sudden appearance of the discoloration which fades slowly. Although this is a common history in any case of ruptured ectopic gestation, it perhaps suggests that repeated small intraperitoneal hæmorrhages, rather than a single severe hæmorrhage, favour the appearance of Cullen's sign.

A blue discoloration of the umbilicus is not, however, pathognomonic of intraperitoneal hæmorrhage. zum Busch (1922) records an example caused by a hæmorrhage into an adherent ovarian cyst and Gold (1926) an example in the skin over an umbilical hernia containing strangulated omentum. Hellendall (1934) records an example in a case of doubtful origin, but possibly associated with cirrhosis of the liver and portal obstruction. None of these cases simulated a ruptured ectopic gestation, but Schumann (1923) recorded a case where, on the basis of a typical Cullen's sign, he erroneously made a diagnosis of a ruptured ectopic gestation. Laparotomy revealed a two months' intra-uterine pregnancy and bilateral acute salpingitis. Pus was oozing from very congested tubes, but there was no free intraperitoneal blood. No explanation was found for the typical umbilical ecchymosis.

Cullen's sign has also been recorded in cases of hæmoperitoneum not due to a ruptured ectopic gestation by Sternberg (1922) and Kapsinow (1925). Sternberg (1922) described a case where a hæmorrhagic ascites due to an adenocarcinoma of the liver was associated with a blue discoloration of the umbilicus. Kapsinow (1926) recorded the case of a child in whom a hæmorrhagic ascites, due to deposits in the peritoneal cavity, secondary to sarcoma of the kidney, was associated with a blue discoloration of the umbilicus. Stutzer observed a brown-blue discoloration of the abdominal wall about the umbilicus and in the right lower abdominal quadrant, three days after the onset of an acute hæmorrhagic pancreatitis. Petrivalsky (1931) records similar findings in three cases of acute hæmorrhagic pancreatitis.

We conclude, therefore, that Cullen's sign is a rare indication of intraperitoneal hæmorrhage; that it is not without fallacies, but that it may occasionally be an aid to diagnosis and sometimes even the presenting symptom.

We are indebted to Mr. H. J. Nightingale and to Mr. S. B. Chambers, honorary surgeons to the hospital, for permission to publish the above cases.

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Clinical and Laboratory Notes

PREVENTIVE IMMUNISATION OF SCARLET FEVER

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DURING the year 1933 there was a sharp epidemic of scarlet fever among the Bolton school-children which was specially noticeable from about May to December, the peak period being the month of October of that year. For the most part the fever was of the mild type, but in three elementary schools the number of cases was increasing, and it was decided to offer the parents protection for the children attending them.

The protection took the form of three fortnightly intramuscular injections of scarlet fever prophylactic toxin (Burroughs Wellcome and Co). The initial dose chosen was 500 skin test doses, the second 5000, and the third 20,000. The accompanying Table, which has been corrected to December, 1934, shows the number of children in each department of the three schools who were immunised. Since the completion of

immunisation in each school, 150 cases of scarlet fever have been notified among the non-immunised group. The majority of the cases were treated in hospital and the diagnosis confirmed. One only has been notified among the completely immunised group. The remaining four cases which occurred among the immunised group received one or two injections only, and therefore were not completely immunised.

1 School.	2 Date of third inoculation in 1933.	3 Dept.	4 Children immunised.	5 Cases of Sc. F. in immunised up to Dec., 1934.	6 Children not immunised.	7 Cases of Sc. F. in children not immunised.
A.	June 29	Infant.	50	1*	140	8
		Sen. & M.	68	—	208	12
B.	Sept. 27	Infant.	27	—	198	34
		Sen. & M.	50	—	155	11
C.	Nov. 23	Infant.	117	1†	309	51
		Sen. & M.	226	2* 1‡	498	34
	Total		538	5	1508	150

Sen. & M. = Senior and Mixed; * Had two injections only; † Had one injection only; ‡ Received three injections.
The four children in column 5 who had scarlet fever after one or two injections are excluded from the total in column 4 and included in the total in column 6.

There were very few reactions after the initial and final injections. Reactions were noted more after the intermediate dose of 5000 skin test doses, but these were for the most part slight. The Dick test was not carried out.

I am indebted to Dr. R. M. Galloway, medical officer of health for Bolton, for his permission to publish this note.

A CASE OF TUBERCULOUS MENINGITIS WITH RECOVERY

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Recovery from a proven tuberculous meningitis is so rare as to merit record.

A man, aged 24, was admitted to the Radcliffe Infirmary, from Dr. Tighe, of Eynsham, on July 11th, 1934. He was a solderer at the Pressed Steel Works, Cowley. Family history: Nil ad rem. Past history: Childish ailments only. Radical cure of hernia 1933.

Present illness.—For six weeks before admission he had experienced general joint pains, which had affected various joints, but mainly the right ankle and knee, and these had caused considerable loss of sleep. For two weeks he had noticed gradually increasing stiffness in his neck and shoulders, and steadily mounting headache, with deafness and tinnitus in the left ear. For one week he had been feeling seriously ill, had been constipated and vomiting at irregular intervals.

Condition on admission (July 11th).—Pulse-rate, 68; respiration, 20; temp., 99·2° F. Alert, good witness; looks ill. Tongue furred; colon loaded with scybala; heart and lungs normal. Marked neck rigidity without opisthotonus. Pupils react normally to light and accommodation. Discs normal. Slight nystagmoid movements of eyes to the right. Definite impairment of hearing in left ear. Cold calorie test also showed marked reduction in time and amplitude; no detailed measurements made. Tendon reflexes all normal and abdominal reflexes present. Kernig's sign present. Plantar response: right, flexor; left, indefinite. On the following day the plantar was definitely extensor. The following were the findings in the cerebro-spinal fluid:—

Date in 1934.	Organisms.	Globulin.	Cells.	Chlorides.
July 11	1 *B. tuberc.*	+++	Poly. Endos. Lymph.	620
,, 13	+ T.B.	+++	—	550
,, 26	0	—	Lymph. Endos.	620
,, 30	+ T.B.	—	Poly. Lymph.	630
Aug. 12	0	+++	—	680
,, 14	0	—	—	—
,, 31	0	+++	Poly.	690
1935. March 20	0	Trace.	None.	800

Radiography of the skull and sinuses revealed no abnormality.

Progress of illness.—During July and August he continued to be gravely ill, suffering from severe headaches at frequent intervals, relieved by lumbar puncture and morphia and recurrent vomiting, worse in the morning. His morale was excellent, in spite of his suffering, and his mind remained clear while his physical condition steadily deteriorated.

Sept. 12th: general condition very poor; emaciation extreme, but still bright and intelligent; still suffering from intermittent headaches and vomiting daily. Neck rigidity less marked. Slight weakness of L. VII. Marked impairment of hearing L. VIII. Left plantar response extensor. These signs suggest a tuberculoma in the posterior fossa involving the L. VII, VIII nerves and associated with a tuberculous meningitis. He was moved on to the balcony, and from this time on began to improve, his headaches diminished, he rarely vomited, and his appetite improved. The progress of his weight was:—

Sept.	28th, 1934	6 st. 13 lb.
Oct.	7th, ,, ...	7 st. 6½ lb.
,,	12th, ,, ...	7 st. 11 lb.
March	12th, 1935	9 st.

On Oct. 5th Mr. R. G. Macbeth examined the ears and reported as follows:—

	Right ear.	Left ear.
Watch	3 in.	½ in.
Swabach	4 secs.	2 secs.
Cold calorie test ..	45 secs.	67 secs. before onset.
Membranæ tympani normal.		

On Oct. 17th the general condition was much improved; there was occasional slight headache; no abnormality was detected in the central nervous system other than impaired hearing in the left ear. On the 20th he was discharged from hospital and sent to convalesce at the seaside. On March 6th, 1935, he was readmitted for investigation and re-examination. Feels and looks well; weight, 9 st.; complaining of a tendency to perspire at night and slight cough; general physical examination negative. Report on ears (Mr. Macbeth):—

	Right ear.	Left ear.
Watch	6 in.	12 in.
Rinné test	+	+
Swabach	5 secs.	3 secs.
Cold calorie test	40	60
No nystagmus. Membranæ tympani normal.		

The temperature was normal; no T.B. were found in one specimen of sputum. Radiography of sputum showed one small healed focus at the hilum of the left lung; in the abdomen there was no evidence of any tuberculous or calcified glands. The Wassermann reaction was negative in the blood and cerebro-spinal fluid.

It seems probable that the general symptoms which preceded the meningitic manifestations represent a tuberculous bacillæmia, with a lodgment and the development of tuberculoma in the posterior fossa in relation to the L. VIII (and VII.) nerves. In this instance there was a pure tuberculous meningitis possibly confined to the posterior fossa and the

meningitis was not the expression, as it usually is, of a general miliary tuberculosis. The improvement in the general condition and the partial recovery of the L. VIII nerve all point to the fact that the infection has been overcome and the local lesion is healed or healing.

FEMORAL HERNIA ASSOCIATED WITH PARTIALLY DESCENDED TESTIS

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The following case illustrates the rather unusual association of partially descended testicle with a femoral hernia.

A well-developed labourer, aged 23, was admitted to Birkenhead Municipal Hospital on Jan. 6th, 1935. He stated that a lump appeared in his right groin twelve months previously, and that he had never been able to reduce it. Thirty hours before admission he was seized with acute abdominal pain, and since then had vomited thrice. His bowels opened well on the day of admission, and there was no abdominal distension.

Examination showed the absence of the right testis from the scrotum, and the index-finger could not be passed into the right inguinal canal. A swelling about the size and shape of a normal testis was found occupying the right femoral canal. It was irreducible and gave no impulse on coughing. The mental condition of the patient was such that little reliance could be placed on his history of the duration of the condition, or of the absence of testicular sensation, so that it seemed possible that we were dealing with a femoral type of ectopic testis. The femoral canal was exposed by the inguinal route, and an ordinary femoral hernia was found containing a knuckle of small intestine. The intestine was viable, and the Lotheisen operation was completed. In the inguinal canal an extremely atrophic testis was found with an associated hernial sac. The testis was removed since it appeared to be little more than fibrous tissue. The inguinal sac was dealt with and the operation completed in the usual manner.

I have to thank Mr. R. A. Grant for permission to publish this case.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF PSYCHIATRY

At a meeting of this section held on April 9th the chair was taken by Dr. David Forsyth, the president, and Dr. J. R. Rees opened a discussion on the Problems of

Out-patient Clinics for Psychoneurotics

He asked his audience to set in order the various localities in which they would advise a poor, obsessional patient to live if he wanted to find provision for treatment. Much more information was needed about the activities of clinics throughout the country; often information was obtained by accident. There was urgent need for treatment; R. D. Gillespie had estimated that one person in thirteen in these islands needed psychological treatment, and few would quarrel with this estimate. There were 162 clinics or early treatment centres in the British Isles, but most of them provided only a diagnostic service, and less than half could provide adequate treatment, including persuasion, re-education, suggestion, or mental analysis. Probably not more than thirty treatment clinics were available for the poor. There was little to be said in favour of associating the clinic with the mental hospital, which still scared people, but there was much to be said for making it a part of a general hospital. It was not, however, helped by the bustling medical atmosphere of a hospital. Perhaps the ideal location was a special building attached to the general hospital, so that close liaison could be maintained while the psychotherapeutic work was able to provide for its special needs of more medical time, more quiet, less nursing, and more sociological approach. Much was to be gained by seeing children and adults in the same clinic. The only real early treatment of mental disorder was the treatment of childhood difficulties.

Some 46 per cent. of the cases coming to such a clinic suffered from anxiety neuroses; 13 per cent. from conversion hysteria; 11 per cent. from obsessive-compulsive neuroses; and 2 per cent. from neurasthenia. It must be clear that the clinic did not deal with the mental defective. No more than 5 per cent. would be referred to mental hospitals. In many of the clinics established under the Mental Treatment Act, 1930, this figure rose as high as 22 per cent. This suggested that psychoneurotics were not so often referred to these clinics which were associated with mental hospitals and staffed by their officers. Since the psychoneurotic problem was so great, attention of local authorities should be directed to the need. The services of the clinic should be available for the courts, and the provision of beds would undoubtedly increase its efficiency. Each clinic must acquire a body of information about services of all kinds available to patients. The staff should include physicians with adequate training in psychopathology and psychotherapy. The primary aim must be therapeutic. The points of view of the mental hospital and the psychopathologist must be coördinated to the service of the clinic. Work might, for the time being, be concentrated on the more intelligent type of patient; for the others, the methods of the general hospital were likely to be successful. There was no age limit; a child of a few months could be helped through its parents, and benefit had been obtained in patients of seventy and over. The standards of treatment should be in every way comparable with those of private practice, every bit as careful and accurate and unhurried. The educational value of the clinics was fully as important as in any other branch of medicine; the uncured—or cured—neurotic patient produced a greater effect on society than the corresponding surgical patient. The out-patient problem of the future would demand a great increase in the number of trained and carefully picked psychiatrists. Mildly pathological motives were responsible for most people's interest in psychology. The cost of private treatment would always be a difficulty, and the State would have to concern itself with much of the treatment. Group treatment by suggestion was possible and time-saving. For the difficult child, the team method seemed to be the best that could be devised. The social service of the clinic was useful for adults as well as children. The shortage of trained medical psychotherapists might make it necessary to recognise a body of lay workers similar to the Chartered Society of Trained Masseuses.

Dr. E. Mapother said that the Maudsley Hospital was much more a diagnostic centre than was the Institute of Medical Psychology. Most clinics were not and could not be confined to psychoneurotics.

Incipient organic and psychotic cases were inevitably treated. In some localities the mental hospital might well prove to be the best place for the clinic; unfortunately, the psychoneurotic in the general hospital tended to drift to the neurological rather than the psychiatric department. The hysterical reaction was common among those of rather low intelligence, and anxiety was found in all grades. The appointment system was most desirable so far as it could be arranged, but was very difficult in a large diagnostic clinic.

Dr. JOHN RICKMAN said that psycho-analytic clinics could not cope with the thousands of people needing help; the turnover did not amount to much more than thirty a year. The interest of their work lay in its relation to research. The psycho-analytic clinic might not treat many people, but it trained a large number of workers, and the training was exceedingly long and arduous. Turkey and Russia, when facing a great problem of education, had found that the first task was to get a body of teachers. The first problem of psychotherapy was to provide a great number of competent workers; the rest would follow. Freud had once said that the best method of reducing the time of an analysis was to do it properly; he would probably say that the answer to the problem of the psychoneuroses was the adequate training of psychotherapists.

Mrs. DOROTHY HARDCASTLE spoke for Dr. R. D. Gillespie, who was not able to be present. He agreed that clinics must not be run for psychoneurotics alone, and that training could not be divorced from the mental hospital. There was great need for a critical attitude towards results and for control groups treated by various methods. A great disadvantage of the clinic in the general hospital was the heavy case-load and prevention of selection; coördination was, however, favoured, and this was very important. Psychiatry should be an integral part of general medicine.

Sir ROBERT ARMSTRONG-JONES recalled the foundation of the out-patient clinic at St. Bartholomew's Hospital, and the opposition it had encountered. The line between psychosis and psychoneurosis was not easy to draw, but was important. The West Riding Mental Hospital had had an out-patient department in Crichton Browne's time, with Hughlings Jackson and Ferrier on the staff.

Dr. RALPH NOBLE said that correct diagnosis, in the first place, was essential, and involved very thorough investigation. In his experience a quiet atmosphere could be found in a general hospital if sought. The use of sedatives should not be entirely neglected—even if the patient was laying bare his soul. The clinic should be separate from the general hospital, but very closely allied to it. Amidst the great number of patients needing help, it was not possible to allot a thousand hours to every patient. Psycho-analysis, apart from research, was impracticable. He liked to give a whole day to a new case, working out the important factors, and giving the patient something good to go home with so that he came again. The psychotherapist must be a psychiatrist. One of the best trainings was a period of general practice. A physical examination was of the greatest importance.

Dr. W. C. SCOTT described out-patient therapeutic work at the Maudsley Hospital of 3673 patients: 32 per cent. suffered from neuroses, 36 per cent. from functional psychoses, and 11 per cent. from neurasthenia. Many had serious psychoses. Different types of service were needed for these different types of patient, and therefore a general psychiatric service should be available. The average time per visit had been eleven minutes, ranging from two minutes to an hour and a half. The ideal seemed to be to have the clinic associated with a psychiatric hospital. Psychiatric problems were related to the whole problem of public health. Adult and child clinics should feed each other. Neuroses were found in all grades of intelligence; high I.Q. was not so necessary, even for psycho-analysis, as had been thought. The most pressing need for the future was the development of psychiatric hospitals.

Dr. DORIS ODLUM found that her figures from Bournemouth and Hove corresponded very closely with those of Dr. Rees. Bed facilities were most essential; of 1000 cases, 10·6 per cent. of the Bournemouth and 8·6 per cent. of the Hove cases had been admitted for rest or change of environment. Of the first group, 83·7 per cent., and of the second group, 67·5 per cent. had recovered or were much improved. These patients could not have achieved good results as out-patients. "Daily out-patients" was an institution that helped many who could not be admitted, or did not need to be. The patients spent their whole day living in the hospital under its routine. The arrangement had proved most valuable and might well be extended.

Dr. LOUIS MINSKI said that the North London clinics, opened as departments of the Maudsley Hospital, had begun as diagnostic clinics, but had had to become therapeutic. Many of the patients were of low intelligence, but had responded well to psychotherapy. Quite long interviews were given, supplemented by special appointments at the Maudsley. A skilled and highly trained social worker was essential.

Dr. NEUSTATTER discussed methods of treatment. Often "first aid" could be given, but for real analytic work three-quarters of an hour three times a week was desirable. A thorough understanding of the case did not necessarily enable the physician to do anything about it. It was a great pity to separate psychiatry and psychotherapy. The psychotherapist who never saw psychiatric patients was apt to get out of touch from the diagnostic angle.

Dr. D. N. HARDCASTLE described the initiation of an out-patient and child guidance clinic at the Herts Mental Hospital. The object of locating it there had been to abolish the stigma of the asylum. The clinic was housed in the mental hospital but run by a staff from London, and this fact broke down the patient's prejudice. If beds were needed the patients entered as voluntary boarders. A similar clinic might well be run in every mental hospital.

Dr. T. E. A. STOWELL regarded "prophylactic treatment" as a contradiction in terms. The best prophylactic for mental disorder was administered by the boot of the older boy at the public school. The sickness due to psychical disorders was a tremendous charge on capital, and employers would readily support clinics if a cast-iron case could be presented to them.

Dr. LETITIA FAIRFIELD said that the Maudsley clinics were very extensively used by the public assistance department of the L.C.C., and were regarded as of the greatest possible value. Patients who had been on the public funds for a very long time were returned to work after treatment. The clinics were also very valuable educationally in assisting adjustment to work and preventing the genesis of the young criminal. The value of the in-patient bed and of multiple methods of disposal of the patient could not be exaggerated. The psychotherapeutic clinic would be of the less value the more it was left isolated.

Dr. CLIFFORD ALLEN suggested that neurologists were not yet fully educated in psychotherapy, but believed that neuroses were due to constitution and

constipation, and could be cured by bed and bromide.

Dr. STACEY WILSON emphasised the effect of the colon on the mind. If the colon were tender in a mental case benefit would be obtained from intestinal antisepsis and antispasmodics.

Dr. A. E. CARVER described an experiment that failed: the Nerve Hospital at Birmingham. Its initiation had provoked great opposition among the medical profession. It had had to compromise, and cease to be a psychotherapeutic hospital. The first step was to convert the doctors.

Dr. REES replied.

ROYAL SANITARY INSTITUTE

AT a sessional meeting held in London on April 9th to consider the problem of

Maternal Mortality

Mr. EARDLEY HOLLAND dealt with factors of special interest in maintaining the present rate of mortality. One of these was an unfavourable change in the methods of obstetric practice. In the last 15 to 20 years there had been a remarkable widening of the indications for intervention during labour, in spite of the efforts to frustrate it on the part of leading teachers and text-books. In speculating on the factors which had led to this he suggested that the following had been chiefly responsible: (*a*) The increasing employment of analgesics and anæsthetics which have by now become almost universal; in a certain proportion of cases these slow down labour and lengthen it, weaken the natural forces, and so lead to an increase in the forceps-rate. (*b*) The hundreds of little hospitals giving local practitioners the opportunity of performing Cæsarean sections and other obstetric operations. The number of Cæsarean sections had increased in an astonishing manner. In the (final) Newman report 160 sections were reported in the second series of 3805 deaths investigated; many of these had been done after previous attempts at forceps delivery. "There may be a tendency," the report suggested, "to resort to Cæsarean section as treatment of complications of labour, perhaps without due consideration of other methods of obstetrical treatment." Whitridge Williams, in the fifth edition (1923) of his text-book, explained the rising mortality of childbirth on the supposition "that many practitioners in urban areas have been led astray by the teachings of those who regard labour as a pathological rather than a physiological process, with the result that interference upon insufficient indications is frequently undertaken by those who do not fully appreciate the risk involved"; inquiry by the Massachusetts State Medical Society showed that in 1921 after puerperal infection Cæsarean section was the most frequent cause of death. (*c*) Uninstructed antenatal work with its mistaken notions about "disproportion," "post-maturity," the "unengaged head," and the resort in consequence to unnecessary interference. (*d*) Any sort of interference with the course of normal pregnancy and labour, by meeting the demand of the patients for shorter labours, or by extension of the indications for drug or operative induction to suit the convenience of the patient, her friends, the doctor, the nurse. (*e*) An exaggerated idea of the value of the infant's life as compared with the life or health of the mother—due to the fact that nowadays pregnancies were spaced, regulated, and relatively rare. This interesting social change in reproductive method was exerting a great influence on obstetrical procedure. Among adverse factors due to changing habits and social circumstances were (1) a relative increase in primiparity, with restriction in the size of the family; (2) the increasing average age of all mothers, primiparæ and multiparæ.

The problem of lowering the mortality had two distinct aspects. One was presented by the so-called "black" areas. Rochdale was for many years in the unenviable position of having one of the highest rates in England. During the three years 1929–1931 it was 10 per 1000. Study of the circumstances made it appear likely that a large proportion of the deaths had been due to too frequent intervention. The support of the medical profession and of the midwives was enlisted, and the interest of the community in general, and of the women in particular, awakened through the pulpit, the platform, and the press to the medical facts. The women thus were taught to make use of the antenatal clinics, to report at the first sign of any abnormality, and to refrain from attempting to persuade the doctor or the midwife to hurry the course of labour. The "drive" was begun in 1931. For the three years 1932–34 the maternal mortality of Rochdale had fallen from 10 per 1000 to 3·9, or about the same rate as the rest of the country. There was no alteration in personnel; merely a change of spirit and of method. In the hospital it was particularly noticed that women with complications of labour were being sent in increasing numbers at a stage when the complication was capable of being treated with greater safety. To reduce the mortality in the black areas should be easy; but further to reduce the mortality to a figure below the existing best would take much time, and the country must be asked to wait patiently until the standard of practice had been remarkably raised and midwifery was undertaken by a select corps of men and women, based on high-class obstetric institutions. The central and local authorities of this country had made a great mistake in believing that the creation of an efficient obstetric service was merely an administrative problem.

THE SITUATION IN MANCHESTER

Dr. R. VEITCH CLARK (M.O.H. for Manchester) asked for consideration of a few facts which had come to light in the practice of the maternity service of Manchester. The figures for puerperal sepsis showed a definite fall in the last four years from 1·7 to 1·0 per 1000 births. The rate for non-septic maternal deaths, which was 2·8 for the quinquennium 1926 to 1930, fell to 2·0 in 1932, and then rose remarkably in 1933 and 1934 to 3·4. During the past four years there had been on the average just over 6000 women seen at the clinics in the city, excluding those held at the voluntary hospitals, each woman making 4–5 attendances. The total number of births in round figures was 12,000, so that over 50 per cent. of the pregnant women were being seen antenatally by the public medical service. In the seven years previous the annual number of antenatal attendances varied from 1400–8000. The fall in sepsis might, he thought, be definitely associated with this fourfold increased antenatal service. Conditions calling for interference were regarded as one of the prime sources of puerperal sepsis, and these could be recognised to a considerable extent by antenatal care. But what about the non-septic puerperal deaths? In the years 1926–29 the average number of deaths from eclampsia was 7; in 1930–33

the average was 3·4—rather less than half. Antepartum hæmorrhage gave an average of 6·5 deaths per annum in 1926–29, an average of 2 in 1932–33. The lowered incidence of these two complications continued up to the present year. Eclampsia was recognisedly a toxæmic death, and half at least of the serious cases of antepartum hæmorrhage were probably toxæmic in origin. In the period 1933–34 placenta prævia caused 5 deaths in 1933 and 9 deaths in 1934, as against 1·7 for the three preceding years. The figures, although not large, did suggest that antenatal work had contributed to a fall in puerperal sepsis and in the recognised toxæmias of pregnancy.

Dr. Veitch Clark had analysed the source of professional attendance on childbirth in Manchester for the years 1930–33 (see Table). In 1933 out of 12,633 births, 4362 were attended by midwives, 971 by

City of Manchester: Births Attended by Doctors and Midwives

Year.	Notified births.	Domiciliary cases attended by midwives.		Domiciliary cases attended by doctors.			Confinements in hospitals and nursing-homes.	St. Mary's Hospital district staff (external practice).
		Total.	Doctor called in by midwife.	Attended by doctor and midwife as maternity nurse.	Attended by doctor alone.	Total of doctors' cases.		
1930	14,310	6,142	3,236	1,102	562	1,664	5,318	1,186
1931	13,480	5,361 •4,409	2,874 †952	994	470	1,464	5,594	1,061
1932	13,114	5,031 •4,169	2,538 †862	850	240	1,090	5,932	1,061
1933	12,633	4,362 •3,550	2,413 †812	741	230	971	6,088	1,212

• = Midwife only present at birth. † = Doctor actually present at birth.

doctors, and 6088 went to hospitals and nursing-homes. The balance of 1,212 cases were attended in their own homes by the extern practice of St. Mary's Hospital. Over 10,000 received attention either from midwives or in hospital. Of the 110 midwives in the city practising midwifery only 50 were dependent solely on midwifery for their living, and 18 of these lived with relations. Of the 60 others, all married women, 45 were definitely not in full-time practice, and 15 also carried on domestic duties. No woman, he said, could maintain her manual skill and sustain her knowledge unless fully occupied in the practice of her profession and assured of a reasonable competency. He would prefer a scheme whereby the midwives were part of the extern connexion with a hospital with an income guaranteed by the local authority. Only 900 cases per annum out of the 12,000 were attended by doctors in their private capacity, with additional 2413 cases on the formal request of midwives. There were 650 practitioners in active work in Manchester, and obviously experience in obstetrics was not available in sufficient amount to maintain skilled practice. That being so he saw no practical solution of the difficulty in a revision of the medical curriculum, but rather in the development of post-graduate work. But while expert work was essential the enlightened coöperation of the mothers should be secured by direct personal contact in antenatal and postnatal clinics.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 6TH, 1935

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 2256; diphtheria, 1264; enteric fever, 28; acute pneumonia (primary or influenzal), 1486; puerperal fever, 45; puerperal pyrexia, 112; cerebro-spinal fever, 36; acute poliomyelitis, 1; encephalitis lethargica, 12; continued fever, 1 (Battersea); dysentery, 20; ophthalmia neonatorum, 75. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on April 13th, was 3737, which included: Scarlet fever, 1122; diphtheria, 1602; measles, 22; whooping-cough, 347; puerperal fever, 23 mothers (plus 8 babies); encephalitis lethargica, 270; poliomyelitis, 2. At St. Margaret's Hospital there were 17 babies (plus 10 mothers) with ophthalmia neonatorum.

Deaths.—In 121 great towns, including London, there was no death from small-pox or enteric fever, 29 (0) from measles, 8 (1) from scarlet fever, 24 (4) from whooping-cough, 45 (7) from diphtheria, 37 (12) from diarrhœa and enteritis under two years, and 184 (33) from influenza. The figures in parentheses are those for London itself.

The number of influenzal deaths remains almost stationary, the reported deaths for the last few weeks (working backwards) being 184, 181, 175, 145, 139, 83, 91, 83, 91, 71, 56. This week these deaths were reported from 59 great towns, Manchester reporting 15, Birmingham 10, Portsmouth, Sunderland, and Stoke-on-Trent each 7, Blackburn, Smethwick, and Swansea each 6, Croydon and Liverpool each 5. (During the same week Glasgow reported 11 deaths, as against 33 in the previous week.) Wigan, Birmingham, and Wolverhampton each reported 3 fatal cases of measles. Three deaths from diphtheria occurred at Bournemouth and at Sheffield.

The number of stillbirths notified during the week was 275 (corresponding to a rate of 44 per 1000 total births), including 44 in London.

REPORTS AND ANALYSES

SEAGER'S EGG FLIP

(SEAGER, EVANS AND CO., LTD., MILLBANK DISTILLERY, DEPTFORD BRIDGE, LONDON, S.E.8)

THIS preparation is a thickish yellow permanent emulsion tasting pleasantly of egg and sweetened wine. When analysed, the following results were obtained:—

Alcohol	20·0 per cent. (by volume).
Total solids	14·0 ,, ,,
consisting of—	
Carbohydrates	8·0 ,, ,,
Proteins	1·71 ,, ,,
Fat	3·26 ,, ,,
Mineral matter	0·4 ,, ,,

Preservatives were tested for with negative results. The analytical figures are consistent with a 10 per cent. emulsion of egg-yolk in a sweetened wine of 20 per cent. alcohol content.

This "flip" is a convenient and agreeable form of taking eggs. In addition it is an obvious food tonic which is available for consumption at a moment's notice, and therefore particularly suited for use in the sick-room.

SCARBOROUGH HOSPITAL.—It was stated at the annual meeting that £300 was lost last year through road accidents. The Mayor pointed out that it was no credit to the motoring public as a whole that they did not respond more freely towards the cost of these accidents. The new hospital is being built, but there has been some delay in its progress because of the underground water at the foundations. A further £8000 has been added to the funds but £20,000 is still required. The new hospital will cost about £5000 more to run than the old, and the board has decided to adopt a contributory scheme.

REVIEWS AND NOTICES OF BOOKS

Human Sex Anatomy

By ROBERT LATOU DICKINSON, M.D., F.A.C.S. London: Baillière, Tindall and Cox. 1934. Pp. 145. 45*s*.

"It appears well within bounds to affirm," says the author in a foreword, "that many of our present beliefs concerning average sex experience and normal sex life have the status of surmises standing on foundations no more secure than general impressions and scattered personal histories."

That Dr. Dickinson has devoted much of his life to establishing on proper foundations our knowledge of reproductive processes is known to all who have read his previous books. The same end is pursued with undiminished vigour in this volume which is produced, under the auspices of the National Committee on Maternal Health, in a series entitled Medical Aspects of Human Fertility. Dr. Dickinson has brought to bear upon this work an enormous clinical experience. He is gifted with outstanding artistic ability, and the chief feature of this book is the collection of beautifully executed drawings which occupy the last 120 pages of the book. This is divided into two essential parts of approximately equal length. The first, consisting of text and commentary, includes nine chapters on purpose and methods; the bony pelvis; uterus, ovaries, and tubes; the vagina; the vulva and breast; male genital anatomy; the anatomy of coitus; the anatomy of the control of conception; conclusion and programme. To these chapters is appended an extensive bibliography. The second part of the work consists of illustrations assembled under headings which correspond to the chapters in Part 1.

The considerable cost of the book is entirely justified by its format, upon which the publishers deserve congratulation. The illustrations cover a field of anatomy hitherto little explored and fill an important gap in our previous knowledge. Some of them have already appeared in books earlier produced by the Committee on Maternal Health, and have already proved useful. The chief criticism applicable to this volume relates to the author's literary style. This is a source of distress to many readers who have found good cause to regret that Dr. Dickinson does not take as much trouble about the composition of his sentences as he does about the drawing of his pictures.

The book will be especially valuable to specialists in gynæcology and genito-urinary diseases.

L'infarctus du myocarde

By EDUARDO COELHO, Professeur à la Faculté de Médecine, Médecin de l'Hôpital de Santa Marta Lisbon. Paris: Masson et Cie. 1934. Pp. 212. Fr.35.

As far as pathological anatomy is concerned little has been added to our knowledge of infarction of the myocardium since it was first described at the end of the 19th century, though a mass of communications on this aspect of the disease have been published. The clinical picture and symptoms have received less attention, and this accurate clinical and electrocardiographic study is welcome. Prof. Coelho begins in the orthodox fashion with a well-illustrated description of the coronary circulation. Then follows a chapter relating the personal experiences of the author in experimental occlusion of the coronary arteries in dogs. A detailed description is given of the immediate and the remote results of occlusion and their bearing on human pathology is discussed. The rest of the book is devoted to clinical observations on a large series of cases. Dr. Coelho is convinced that this condition is much more common than has yet been realised, and believes that it is nearly always possible to diagnose it. The most important aid to diagnosis is undoubtedly the electrocardiograph. A physician familiar with the clinical picture, who has been able to get an adequate history and an electrocardiogram, should make no error in the diagnosis between myocardial infarction and an acute abdominal condition or a cardiovascular neurosis. As for prognosis, the author is inclined to think that this is not so grave as is thought, and that in most cases recovery may be expected. He admits that it is difficult to prophesy the outcome in an individual case. When death occurs it is nearly always the result of ventricular fibrillation. This is an interesting and informative monograph, which contains an extensive bibliography.

Handbook of Anæsthetics

Fourth edition. By J. STUART ROSS, M.B., Ch.B., F.R.C.S.E., late Lecturer in Practical Anæsthetics, University of Edinburgh; and H. P. FAIRLIE, M.D., Anæsthetist to the Western Infirmary, the Royal Hospital for Sick Children, and the Dental Hospital, Glasgow. Edinburgh: E. and S. Livingstone. 1935. Pp. 299. 10*s*. 6*d*.

THIS edition of Ross's well-known book is the product of Dr. Fairlie alone, and it has lost nothing in the new control. Dr. Fairlie has wisely continued to make no change in the general scheme and arrangement, but has brought the matter up to date. It continues to be, as it has been since its first appearance, one of the best guides for the student or practitioner who is practising anæsthetics. It is not a book for the specialist. Particularly good is the instruction in the use of ether. Nitrous oxide and oxygen is not so well or so carefully handled, no doubt because its use in major surgery is more for the specialist than for the occasional anæsthetist. The brief discussion of the physiology of anæsthesia and of shock is well done, and tells all that it is essential for the student to bear in mind. The print and production of the book are excellent, and we have no doubt of its continued success as a text-book for students.

Textbook of Biology

By E. R. SPRATT, D.Sc., F.L.S., F.I.H., A.K.C., formerly Lecturer in Botany, King's College, London; Head of the Biological Department, Norwood Technical Institute; and A. V. SPRATT, M.Sc., F.I.H., A.K.C., Head of the Science Department, King's Warren School, Plumstead. London: University Tutorial Press Ltd. 1935. Pp. 646. 9*s*. 6*d*.

As an aid to practical work this book will be found of distinct value, since the descriptions are clear and the diagrams are excellent. The facts described, however, are given little significance in relation to general biological principles. Important subjects such as sex, reproduction, development and growth are hardly mentioned in their dynamic aspects, and the one general chapter on heredity and evolution is inadequate and in many respects misleading. No idea is given of the problems which biologists are at the moment

attempting to solve. Since most students taking elementary biology will never study the subject more fully, it is essential that they should be made aware of these broader aspects of the subject which are of importance to every educated man—the view obviously taken by the authors.

Les traitements de l'hypertension arterielle

By MAURICE ROCH, Professeur de Clinique médicale a la Faculté de Geneve. Paris: Masson et Cie. 1934. Pp. 148. Fr.20.

IN this member of a series of monographs on clinical medicine and surgery, Prof. Roch divides cases of high blood pressure into two groups—concordant and discordant. The latter includes patients who have either a high systolic and normal or low diastolic, or a high diastolic and normal systolic reading. Discordant high blood pressure is always attributable to some cardiac cause, such as aortic regurgitation or congestive heart failure, and does not therefore come within the category of vascular hypertension.

The treatment of essential hypertension is considered in the light of various hypothetical causes such as infection, nervous factors, endocrine disturbances, renal lesions, &c. Prof. Roch points out that patients with malignant hypertension are beyond the scope of therapeutic measures. At the other extreme are those who are free from symptoms and require no treatment. It is the intermediate group with which the physician is chiefly concerned. In these cases, although we have no means of dealing directly with the underlying cause of the condition, much can be done to relieve symptoms and to prolong life. Rest and graduated exercise are the two most important measures; dietetic treatment is also important. Drugs are chiefly of value for dealing with the various complications which may arise, such as anginal attacks.

This little book gives a well-balanced account of the present state of our knowledge on its subject, and contains a large number of references to original papers published not only in France but also in other countries.

Aids to Public Health

Third edition. By W. G. AITCHISON ROBERTSON, M.D., D.Sc., D.Litt., F.R.C.P.E., Barrister-at-Law; late Lecturer on Forensic Medicine and Public Health, Surgeons Hall, Edinburgh. London: Baillière, Tindall and Cox. Pp. 208. 3*s.* 6*d.*

THIS is an elementary book on public health, dealing with the range of subjects usual in British publications of its kind—e.g., infection, disinfection, industrial hygiene, health of school and pre-school children and of mothers, food, housing, drainage and sewage disposal, atmospheric conditions, ventilation, lighting and heating, water-supplies, disposal of the dead, vital statistics, and sanitary administration. The class of student for whom it is intended is not clear, but it is readable rather than informative, and to school-children, for instance, this might be a recommendation. Unfortunately it contains several mis-statements. One is given the impression that trench frost-bite is a synonym for trench fever; that undulant fever caused by *Brucella melitensis* is becoming more common in this country; that contagious abortion of cattle is associated only with a similar condition in "human females"; that the Clayton apparatus is the usual means of ridding ships of rats; that every child entering school is mentally graded by school medical inspectors; that deficiency of vitamin A leads to rickets, and of vitamin D to scurvy; that one gramme of protein or carbohydrate yields 4·5 calories; that a dairyman must notify tuberculous cattle to the medical officer of health; that a usual standard of cubic space per patient in fever hospitals is 2500 to 3000 cubic feet; that water is usually chlorinated by bleaching powder; that an index death-rate and a standard (*sic*) death-rate are the same thing; that the "Comparative Mortality Figure" represents the corrected death-rate in each town compared with the recorded death-rate at all ages in England and Wales taken as 1000; and that there is some other "Occupational Mortality Figure" in general use. Enough has probably been said to indicate that the book is not suitable for serious students of public health.

Practical Endocrinology

Symptoms and Treatment. By MAX A. GOLDZIEHER, M.D., Endocrinologist, Gouverneur Hospital; Chief of Endocrine Clinic, Gouverneur and Brooklyn Women's Hospitals. London: D. Appleton-Century Company, Inc. 1935. Pp. 326. 21*s.*

Prof. Goldzieher teaches that an underlying veiled endocrinopathy should be suspected in all cases in which the symptoms observed are not satisfactorily explained on the basis of demonstrable pathological changes. He explains that in this book he sets out his personal concepts, and readily admits that some of the views upheld are not universally accepted. These introductory remarks convey a fair impression of the attitude and purpose of the author, whose work—short, simple, and dogmatic—is offered to the general practitioner. Most of the chapters deal with signs and symptoms, and being concise and practical, they will give considerable help to the doctor who, faced with a difficult case, wonders whether he is dealing with some obscure endocrine condition. The critical reader may feel that the endocrinopathies whose pathological basis is established should have been more sharply distinguished from those in which a particular endocrine origin for symptoms is inferred from analogy or circumstantial evidence. The chapters on treatment occupy one-sixth of the book, and they are, like the rest, a mixture of personal predilections with prevailing practice.

Die Folgen der Entmannung Erwachsener

By Prof. JOHANNES LANGE (Breslau). Leipzig: Georg Thieme. 1934. Pp. 177. RM.5.

THIS is an account of a follow-up investigation of 310 male adults who have sustained partial or complete loss of both testes (1) following war wounds (179 complete loss and 68 partial loss), and (2) following tuberculosis (63 complete loss). Their ages when examined by Prof. Lange ranged from eighteen cases under 35 to twenty-three over 55. Half were over 40. At the time when the injury was inflicted half of the cases were under 25. The investigation is based on a very full questionnaire of five pages, filled in by a doctor, asking some 200 questions under ten general headings.

Only a quarter of the cases were free from noticeable after-effects. Though the subjects of the investigation were not unduly affected by epilepsy, and were not predisposed by their injuries to endogenous mental disorders, and suffered comparatively little in social usefulness, it was established that potency was immediately or slowly extinguished in 112 out of 141 cases about whom information on this point was available, bodily changes of a eunuchoid character

supervened in a majority of cases, and an appreciable proportion experienced attacks of giddiness sometimes amounting to fainting attacks, loss of vitality, and depression. The length of the period during which the patients were under observation has permitted the author to obtain interesting information upon the lapse of time between the infliction of the injury and the appearance of symptoms. Allowance is made for the fact that most of the subjects were in receipt of pensions, and for this reason did not minimise their disabilities. In general, the most noteworthy conclusion of the book is that the effects of castration vary to a surprising extent from individual to individual.

Eros and Psyche

An Essay on the Constitution and Destiny of Man. By BANCHARA BRANFORD. London: London University Press. 1934. Pp. 379. 12*s.* 6*d.*

Mr. Branford has a fine appreciation of Eastern and Western thought, and has done much to underline their common factors and their essential differences. This book is something more than an attempt to unite Eastern and Western thought; it is a philosophical treatise exhibiting a breadth of learning which will humiliate most readers. Unfortunately the manner of the writing is somewhat staccato, and the high degree of compression on each page makes the work difficult to digest. Those who have a philosophical bent and a background of considerable reading will find it attractive and even stimulating.

Une nouvelle syphilis nerveuse

By PAUL RAVAUT, Membre de l'Académie de Médecine; Médecin de l'Hôpital, St. Louis. Paris: Masson et Cie. 1934. Pp. 196. Fr.45.

Dr. Ravaut tells us that as long ago as 1903 he reported his first series of cases of latent neurosyphilis, that is to say, cases of syphilis in which there were no clinical signs of involvement of the central nervous system and in which the condition could only be recognised by routine lumbar punctures. By following up the cases over a number of years he has ascertained that many of them may completely clear up, whereas others are the precursors of clinical neurosyphilis. The importance of early diagnosis is stressed, because the earlier the cases are treated the more likely is the involvement of the central nervous system to be eradicated, either by chemotherapy or by malaria therapy or by both. It would have added considerably to the value of the book if details of treatment had been given; for example, as regards the comparative value of trivalent and pentavalent arsenic, silver salvarsan and neo-silver salvarsan, bismuth preparations, intrathecal injections, and so forth; Dr. Ravaut has pursued his studies of the subject for over 30 years, and he notes with satisfaction that investigators in France, Germany, and America have confirmed his original observations. He makes no reference however to the important investigations of P. Fildes, R. J. G. Parnell, and H. B. Maitland upon 1314 cases of syphilis among naval ratings, the results of which were published in 1920 by the Medical Research Council under the title "Unsuspected Involvement of the Central Nervous System in Syphilis." These observers found 28 per cent. of their cases to have abnormalities of the cerebrospinal fluid, and they concluded that more definite evidence must be produced before Ravaut's statement that 62 per cent. of cases of secondary syphilis have abnormal central nervous systems could be accepted without reserve.

The changes that may be found in the cerebrospinal fluid are fully described and stress is laid upon the types of cell—the most important being the plasma cells. A coloured plate shows well the appearances of the cells as stained by methyl-green-pyronin (Unna-Pappenheim); by means of the type of cells it is possible to distinguish between the meningovascular and the meningo-parenchymatous forms of neurosyphilis. Dr. Ravaut has done well to collect into one book the results of his extensive researches.

Black's Veterinary Dictionary

Second edition. By WM. C. MILLER, M.R.C.V.S., F.R.S.E., Courtauld Professor of Animal Husbandry in the Royal Veterinary College. London: A. and C. Black Ltd. 1935. Pp. 1141. 21*s.*

Black's Veterinary Dictionary is already well known to those who handle animals, and a new edition, incorporating some of the advances in knowledge which have been made during the last seven years, will be welcomed. In general plan the book resembles Black's Medical Dictionary. Animal management and hygiene receive considerable attention, whilst disease is treated in such a way as to increase the reader's general knowledge and help him to render appropriate first-aid treatment. At the same time it encourages coöperation between the layman and the veterinary surgeon. Fourteen other workers, including some of world-wide repute such as Prof. F. A. E. Crew and Prof. R. G. Linton, have assisted by contributing special articles.

Considerable effort has been made to make this publication comprehensive and useful by extensive cross-indexing, but even now there are some omissions which will affect particularly the non-professional reader. A detailed chapter on dog management and a more extensive index of popular agricultural terms would be useful additions. Prof. Miller has maintained a high standard on all subjects appertaining to animal management and animal hygiene; sections dealing with diseased conditions follow orthodox teaching. With regard to the more specialised subject of bacteriology, the presentation is less satisfactory. In an attempt to render the subject simple, the author and his collaborator have sometimes caused confusion. For instance, steaming for thirty minutes on three successive days is the only method of sterilising medium which is recorded (p. 80). In a table dealing with nomenclature (pp. 1089–1090) bacteria are for some obscure reason tabulated alphabetically, the nomenclature of the American Society of Bacteriologists being adopted. As a result, closely allied organisms such as the typhoid bacillus (Eberthella) and *S. enteritidis* are separated from one another by leptospira, mycobacterium, and other genera. Furthermore, B C G is given generic significance, the name botriomyces is still used for staphylococcus when that organism causes a granulomatous lesion, pasteurella are still classified according to the zoological species of the host, and *Vibrio septique* is given as an appropriate example in the definition of the word vibrio. The unqualified statements (p. 1089) that *Actinobacillus lignièresi* causes actinomycosis and *Leptospira icteroides* causes yellow fever in the human being are misleading.

Taken as a whole, this publication is an excellent piece of work which will bring credit to the author and publisher, and will be of immense value to stock owners throughout the world.

THE LANCET

LONDON: SATURDAY, APRIL 20, 1935

THE POSITION OF OSTEOPATHY

THE most recent attempt to obtain State recognition for the cult of osteopathy came to an ignominious conclusion when, at the meeting of the Select Committee of the House of Lords on April 12th, Mr. J. H. THORPE, K.C., leading counsel for the promoters of the Bill, opened the twelfth day's business by announcing the decision of his clients to proceed no further with the Bill. Two reasons were given by Mr. THORPE for this unexpected withdrawal. In the first place, he said, it had become clear during the meetings of the Committee that the issue had changed; it was now not so much the desirability of the registration of osteopaths and the regulation of the practice of osteopathy, as the question whether osteopathy could be said to rest upon a scientific basis. This was a matter in which he found himself out of his depth, and on which, "speaking with great respect," it was beyond some of the members of the Select Committee to make a finding. The second reason for the withdrawal was the position of the British School of Osteopathy, an essential feature of the Bill. The promoters felt that they would not be justified in asking for the passage of a Bill which was so intimately bound up with the continuance of this school. So far few will be found to differ from Mr. THORPE, though many may wonder whether the promoters of the Bill will appreciate the full implication of his remarks. It was the remainder of Mr. THORPE'S speech which aroused an immediate reaction, for he went on to plead, apparently with the concurrence of Lord ELIBANK, who introduced the Bill in the House of Lords, that the Select Committee should recommend that a Royal Commission, or some equally responsible body, should be set up to inquire into the scientific justification for the theory of osteopathy. Very naturally counsel for the opposing bodies strongly objected to this suggestion. They pointed out that if their lordships proposed to make such a recommendation it was incumbent on them to continue the hearing, since expert witnesses, who had studied the so-called scientific evidence produced, were prepared to say that there was no acceptable evidence before them that osteopathy rested on any scientific basis at all. After considerable argument their lordships debated in camera and then decided to hear two more witnesses of their own selection and to leave it at that.

By an adroit manœuvre the osteopaths have extricated themselves from a difficult position, but we think that a claim made by their counsel that the battle is drawn will meet with little support from the general public. In no contest can the side which breaks off hostilities claim an equal position with opponents who desire to go on. Let us consider the position at the end of the eleventh sitting of the Committee. The representatives of osteopathy had had a clear field, and for some weeks the lay press had been full of the osteopathic theory and the osteopathic lesion. Osteopathy and manipulative surgery, often confused during the sittings, were hopelessly muddled up in the reports; in any argument defence of theory gave way to defiant support of practice as the needs of the moment demanded, and prejudice and bias were freely ascribed to every medical witness. Gradually, however, the issues before the Committee became defined, and now the claims for a scientific basis for osteopathy came up to be examined. Mr. H. S. SOUTTAR, the last clinical witness to be called, had given his trenchant evidence-in-chief and was awaiting cross-examination, and it was known that he was to be followed by experts in various fields, notably pathology, physiology, and anatomy, whose special function was to report on the "scientific" writings on which such stress had been laid. And this was the moment chosen to break off the contest. To the surprise of all who throughout the sittings of the Committee had admired his gallantry and skill, Mr. THORPE, having made no attempt to combat Mr. SOUTTAR'S challenge of fraudulence, threw overboard any defence of the seven Bulletins of the A. T. Still Institute for Research and the rest of the evidence supplied with such impressive zeal by Dr. MACDONALD. It is really no explanation for the remarkable course of action to say, as Mr. THORPE did, "I should like to recall that it is the osteopaths, with the assistance of a noble lord, who have come into the open, who have urged the presentation of this Bill in Parliament; they have satisfied, at any rate, one noble lord, and they are ready to submit with confidence to any issue that is to be decided hereafter by an impartial tribunal." For what does this amount to? We hesitate to suggest that the noble lord was biased, but he accepted a Bill whose main structure required the existence of an institution which has since been entirely discredited; and he attempted to pass through Parliament a Bill which would give legal status to practice founded on a doctrine on the justification for which it is said to be "beyond" a selected group of his fellow legislators to express an opinion. If to try to rush Parliament in this way is to be regarded as a meritorious act, then indeed osteopathy emerges with flying colours from the inquiry. But we prefer to believe that saner opinions will prevail, and that the report of the Select Committee will show that

> "... noble statesmen do not itch
> To interfere with matters which
> They do not understand."

THE HEART IN SCARLET FEVER

IN scarlet fever of the fulminating type, now rarely encountered, the cause of death may be an acute toxic myocarditis; but the cardiac lesion most often seen in this disease is an endocarditis—sometimes associated with pericarditis—which

becomes manifest in the later stages. FAULKNER, PLACE, and OHLER[1] point out that the existing clinical descriptions of "scarlatinal endocarditis" do not agree with one another and that the diagnosis of acute endocarditis in the presence of infection may be very difficult. They are inclined to doubt the quantitative value of the various estimates of its incidence, some of which they quote. Thus J. F. H. BROADBENT (1908) in an analysis of 22,096 cases of scarlet fever found 129 (0·58 per cent.) examples of endocarditis, and A. JOE (1924) reported 61 (0·25 per cent.) with endo- or peri-carditis in a series of 24,102. It may be added that in another analysis ZISCHINSKY,[2] examining 20,000 records of scarlet fever (1902–29), could find only 10 (0·05 per cent.) with evidence sufficient for a diagnosis of endocarditis. In the 7 which proved fatal an "infective" or malignant lesion was found post mortem, while of the 3 which recovered, 2 had had undoubted acute polyarticular rheumatism late in the attack and only 1 had residual mitral insufficiency which could reasonably be ascribed to scarlet fever alone. These analyses are based on records made in different cities (London, Edinburgh, and Vienna respectively) and the material analysed is ample enough to eliminate chance. The difference in the incidence of endocarditis which they reveal is to be ascribed not to defective diagnosis but to variation in the type and severity of scarlet fever and its consistent trend, over the period represented, towards increasing mildness.

FAULKNER and his colleagues have looked at the problem from two angles: they have made electrocardiograms during the acute phase and then have inquired into end-results in the form of chronic valvular disease. During 1932–34 an electrocardiographic study was made of 171 cases of scarlet fever of "relatively mild" character, during and following the acute infection; except that all cases of scarlatinal arthritis were included, no other selection was made. Of these 171 patients, only 11, whose ages ranged between four and sixteen, developed abnormal records; in 5 there was a prolongation of P–R, and in 6 a flattening or inversion of T. There seemed to be no relation between the severity of the illness and the incidence or degree of electrocardiographic abnormalities. Nor were the electrocardiographic and clinical findings altogether consistent: for in 5 cases in which the record was abnormal there were no physical signs, and 3 others had only systolic murmurs; while 17 patients whose records were normal had systolic murmurs (though without other evidence of valvular damage). It was noteworthy also that the abnormality never appeared before the thirteenth day from the onset of scarlet fever, and the authors compare this delayed reaction with the recrudescence of acute rheumatism after a respiratory infection; in 5 of their cases, moreover, the electrocardiographic manifestations coincided with a return of fever. In the second part of their inquiry 600 patients of an average age of 6·3 years were examined 1–3 years after they had been in hospital with scarlet fever. Only 7 were found to have developed signs of chronic valvular disease, but in 2 of these there had been signs before discharge, while 2 others had had rheumatic fever in the interim. In the remaining 3 there was no antecedent history of rheumatism or chorea to account for the valvular disease, and the lesions were indistinguishable clinically from "rheumatic" heart disease. Contrary to the general view, FAULKNER, PLACE, and OHLER did not observe that an attack of scarlet fever lights up an existing quiescent rheumatic cardiac lesion; thus among the 171 cases examined by electrocardiograph during their illness there were 6 with old rheumatic lesions, and only 1 of these had signs of reactivation. Their general conclusion is that all the findings in the acute and late phases of cardiac involvement in scarlet fever are similar to those seen in rheumatic fever following acute tonsillitis. In both conditions there is often a well-defined latent period between the respiratory infection and the secondary constitutional reaction, and in both of them endocarditis may occur with or without an acute migratory arthritis. They believe we are now justified in saying that rheumatic and scarlatinal heart disease are probably identical, and that upon the allergic hypothesis "a properly sensitised individual may respond to an infection with *Streptococcus scarlatinæ* by the allergic reaction known as rheumatic fever." There is no evidence, they add, that this reaction differs significantly from rheumatic fever following other streptococcal infections of the upper respiratory tract.

Most clinicians in this country would agree that, whatever the pathogenesis, the acute polyarthritis of simple scarlet fever is "rheumatic"; but they would incline to the view of HECTOR[3] that "the almost invariable result of scarlet fever upon the heart already damaged by rheumatism is a re-kindling of the old trouble."

[1] Faulkner, J. M., Place, E. H., and Ohler, W. R.: Amer. Jour. Med. Sci., March, 1935, p. 352.
[2] Zischinsky, H.: Jahrb. f. Kinderheilk., 1930, cxxvii., 337.

CHILDBIRTH AT HOME OR HOSPITAL?

Is the home or the hospital the best place for a confinement? Of recent years there has been a much wider provision and use of maternity beds in hospitals and other institutions, and the fact that during the same time the maternal mortality-rate has increased naturally raises doubt in many minds as to the possible connexion between the two. Conflicting views on this question were put forward at a discussion on maternal mortality at the Royal Sanitary Institute on April 9th. Mr. EARDLEY HOLLAND, who opened the discussion and whose remarks are briefly reported on p. 936, held that the prime cause of a high maternal mortality was insufficient training of the medical profession, leading to meddlesome midwifery. He compared the situation to the British Admiralty sending a battleship to sea with an amateur crew, and suggested that the Rochdale experiment[4]—in which the maternal mortality-rate for the years 1929–31 of 8·90 had been reduced to 2·99

[3] Hector, F. J.: Arch. Dis. Child., 1926, i., 339.
[4] Brit. Med. Jour., Feb. 16th, p. 304.

for the three subsequent years by a campaign to make the public and the midwives and doctors (as it was put) obstetrically conscious—proved his contention. Dr. ANDREW TOPPING, under whose auspices as medical officer of health the experiment had been initiated, confirmed Mr. EARDLEY HOLLAND'S view that the previous high rate was caused by too much midwifery, and that the improvement was due entirely to a change of outlook, the expectant mother and her relatives having been educated not to bring pressure to bear on the medical attendant to hurry things up. Another factor was that the doctors sent cases with complications into hospital earlier and the number of failed-forceps cases had been greatly diminished. Dr. W. H. F. OXLEY suggested that it was not so much lack of training as the conditions under which he had to work that drove the medical attendant to interfere too much; but since the pressure towards interference is largely removed in confinements in institutions, his plea for confinements to take place at home seemed illogical unless the whole country is to be educated on the Rochdale lines. Dr. R. VEITCH CLARK (of whose remarks a summary also appears on p. 936) gave, indirect support to the plea for more institutional confinements when he showed that the average number of confinements attended by practitioners in Manchester was only two and a half per annum, and that out of 110 practising midwives only 32 were dependent wholly on their professional earnings for their maintenance. How, he asked, could such a very part-time service be efficient? More than half the confinements in Manchester take place in institutions, but Dr. VEITCH CLARK would encourage domiciliary confinements by limiting the number and thus improving the practice of midwives, on the lines of the recent report of the Joint Council of Midwifery.[5] Sir FRANCIS FREMANTLE contributed to the discussion by foreseeing Parliament's willingness to pass even restrictive and costly measures if satisfied that they would have the desired effects.

Everyone agrees that provision of beds for abnormal cases must be adequate, and that there is still a lack of beds for antenatal cases requiring observation and treatment. But, with the undoubted additional risk from outbreaks of sepsis in institutions, is the costly provision of beds for a high proportion of normal cases justified? Dr. GEORGE BUCHAN, who presided at the meeting, considered that the women themselves have already answered the question by their increasing demand for confinements in institutions; but it must be remembered that in the U.S.A., where domiciliary confinements are almost unknown, the maternal mortality-rate is higher than in this country and is also increasing. Nor is the risk of unnecessary operative interference entirely removed, at any rate for private patients, by confinements in hospital, since in one hospital in Philadelphia we learn [6] that "in a period of six months an operative incidence of 50 per cent. was shown on the private floor service as against 4 per cent. in the ward service." Whether the normal case is to be confined at home or in hospital, it will still be necessary to improve the training and practice of the doctor and midwife, and to educate the public against needless interference. But there must clearly be other factors involved, as the story of the so-called black area shows. For at least 50 years these areas have had a rate substantially higher than the rest of England, and no one would suggest that the doctors, midwives, or public in Wales and north-west England are less fully educated than others or less conscious of their responsibilities. Perhaps the investigations now being undertaken by the Ministry of Health will bring to light this unknown factor.

[5] THE LANCET, Feb. 23rd, p. 457.
[6] Maternal Mortality in Philadelphia, 1931–33. Philadelphia County Medical Society, 1934.

FUNCTIONS OF LYMPHATICS

OUR knowledge of the lymphatics and of the part played by them in maintaining the circulation has lagged far behind that relating to the vascular system. This is doubtless due in part to technical difficulties in making direct observations upon lymphatic capillaries. Recently S. Hudack and P. D. McMaster [1] described a delicate technique by means of which living peripheral lymphatic trunks and capillaries are made visible. With a dissecting microscope and micro-injection apparatus, India ink and various dyes may be injected into the ears of albino mice illuminated by light reflected from white porcelain plaques. These authors have applied the method chiefly to a study of permeability of lymphatic endothelium and to the behaviour of lymphatic channels damaged by incisions and burns. When carbon particles have been introduced into them, the lymphatic channels can be effectively photographed by reflected or transmitted light. Using the same method, B. D. Pullinger and H. W. Florey [2] show clearly by sets of photographs taken with the mouse's ear placed on the end of a total reflection rod that injection of hydrokollag containing 1/5 pituitrin (Parke, Davis and Co.) or 1/5000 adrenaline causes no contraction of the lymphatic capillaries, although when the drug escapes into the surrounding tissues it causes a marked contraction of the arteries. Nor does mechanical stimulation of the tissues produce any active response by lymphatic capillaries. The walls of the lymphatics are elastic and can be distended by moderate pressure without sign of rupture or leakage of hydrokollag particles.

An interesting development of the work concerns the part played by the lymphatics in œdema, whether inflammatory or otherwise. It is known that lymphatics are dilated in inflammation, and this is of moment when it is considered that the pressure within them is lower than that in the surrounding tissues. Pullinger and Florey found by injecting the tissues of the mouse's ear with saline, with histamine 1/1000, or with calcium chloride, after filling the lymphatic capillaries with hydrokollag, that dilatation of these vessels was maintained and the accumulation of fluid in the tissues did not compress them. Histological studies of the specimens used for these experiments, and of suitable controls in which hydrokollag had been omitted, suggested that the lymphatic channels are held open by the connective tissue fibres which are attached in considerable numbers to their walls. The dilatation therefore would appear to be of a passive nature.

[1] Jour. Exper. Med., 1932, lvi., 223.

ANNOTATIONS

THE METROPOLITAN POLICE LABORATORY

THE opening of the Metropolitan Police Laboratory at Hendon last week was an occasion of real significance. It was an expression on the side of the law of a determination to combat the forces of crime, recognising that those forces had grown more difficult to withstand since the criminal had learnt to enlist science on his side. Everybody is familiar with the activities of those admirable amateur detectives Sherlock Holmes—it is not remembered at the moment whether he had any academic standing—and Dr. Thorndike. No doubt for the purposes of the story the authors, both medical men, assumed that their heroes were masters of matters in connexion with forensic medicine to an extent that no ordinary man of law or ordinary man of medicine could be. Of course this assumption was quite unjust. It has always been the routine in police procedure to carry out, as far as up-to-date knowledge permitted, the intensive researches which Conan Doyle and Austin Freeman attributed to their super-investigators, make scrupulous examinations of the dead body, and of all surface markings and skeletal characteristics. Again, the examination of blood and other stains, and of premises or fomites connected with a possible crime, in order to obtain evidence, has always been conducted by the police authorities, and treatises on forensic medicine give much information on the procedures. But to the rank and file of the constabulary most of this was unknown, even while the necessity for observation of all that might have relation to the circumstances of a crime was complied with. The Metropolitan Police Laboratory will bring this knowledge nearer to the general body of policemen by creating a class of inspectors as experts on the scientific investigation of crime.

The students at the new laboratory will not be taught elaborate physiology, toxicology, and so on. The intention is to create for the metropolitan area a laboratory which can be used for training selected students for scientific work in connexion with criminal cases as they come to the notice of Scotland Yard. Similar institutions to the one now started in London are already at work in Edinburgh and Glasgow, and the need for a laboratory had been for some time felt in London. The school is starting with 60 students whose claims for the special training have been suitably investigated, and among them are young police officers of promise and experience, and recruits from various universities. A certain rank in the constabulary is given to these cadets, whose pay suffices to discharge their comfortable accommodation and an adequate mess bill, while they remain to this extent on probation, that at the conclusion of the course they will have to sit for a passing-out examination. The curriculum, which is under the direction of Dr. James Davidson, lately pathologist to the Royal Infirmary, Edinburgh, includes (among other things and mainly) instruction in an adequate amount of anatomy and physiology, in chemistry and microscopy, the lessons here being directed almost exactly to those difficulties, the explanation of which leads to the acquittal in detective novels of apparently incriminated persons.

The laboratory will, it is hoped, prove a stimulus to the institution in suitable places throughout the country of similar laboratories, and two or three of our large provincial centres have already started work on these lines.

ASTHMA

Sir Humphry Rolleston has summarised [1] the work of the Asthma Research Council since its constitution in 1927 and adds a bibliography of publications by the Council's research workers and medical advisory committee (1928–34). It is interesting to read the original programme of research in the light of subsequent developments. Good work has been done in describing more clearly the natural history of asthma, its relation to other allergic disorders, its constitutional basis, and its prevalence. The value of respiratory exercises and the importance of psychological factors in the disease have been clearly brought out, and this is probably the chief contribution made to therapeutics. In the majority of cases asthma begins in childhood, and at this period, before the asthmatic habit has become ingrained and gross damage has been done to the respiratory system, there is a reasonable chance of arresting it by breathing exercises and by the removal of psychological stimuli. Nothing very novel has come from the study of the parts played by nasal abnormalities, by protein sensitisation, and by bacteria and other organisms, for these had been exhaustively considered by previous workers; indeed, it seems unlikely that further striking progress will be made on these lines. The origin and significance of "urinary proteose" remain obscure. It is surprising that so little has been done to study the effects of diet in asthma, for lay members of the Council expected great results from this, and though the difficulties of dietetic experiments on ambulatory patients are great, they should not be insurmountable. The pharmacological side also seems to have been neglected, except for studies on the relative merits of ephedrine and pseudo-ephedrine, and experiments with di-oxyphenylalanine. Quite apart from research on new synthetic or pharmacological principles akin to adrenaline and ephedrine, there is an obvious need for clearing the jungle of symptomatic remedies for asthma, in the same way that the therapeutics of heart disease and anæmia have been rationalised in the past few years. It should also be relatively simple to discover what drugs can best be combined with ephedrine to prevent the unpleasant side reactions so common with this drug. There are more than enough patients for controlled clinical investigations of this kind, which seem likely to offer a better return than highly technical methods of preparing vaccines or grape-shot mixtures of antigens for inoculation.

MEDICAL TREATMENT OF GLAUCOMA

IT is generally held by ophthalmic surgeons that non-operative treatment of glaucoma is unreliable and should only be resorted to either as a preliminary to operation or in cases where for one reason or another operation is impracticable. But this opinion is not universal. Prof. G. H. Burnham of Toronto has recently advocated [2] his "combined treatment" as a substitute for operation in most cases, and many surgeons have succeeded in arresting the progress of the disease in very chronic cases by the continued use of eserine. Some years ago it was discovered that adrenaline has the power of diminishing intra-ocular

[1] A Report on the Work of the Asthma Research Council from 1927–1934. By Sir Humphry Rolleston, G.C.V.O., F.R.C.P. Obtainable from the Council, c/o King's College, Strand, W.C.2.
[2] Brit. Jour. Ophth., 1934, xviii., 704.

tension, and Carl Hamburger of Berlin had some success with a related drug, called Lævo-glaucosan, which, although it dilates the pupil, has the property of bringing down intra-ocular tension. Josef Böck, writing [3] from the University eye clinic of Vienna, deprecates the use of this and other drugs such as histamine which cause so much chemosis as to make operation, if it should be decided on, more difficult. The intravenous injection of hypertonic solutions of salt or sugar, which have also been recommended to bring down the tension, may cause collapse in elderly patients. The only reliable palliative is the time-honoured treatment by drops of eserine or pilocarpine, carefully regulated as to strength and time of administration according to the particular needs of the patient. In a more recent paper in the same journal [4] Hamburger, whilst admitting that his first hopes from glaucosan were too optimistic, still claims that this drug is indispensable in the treatment of certain cases of secondary glaucoma —viz., those due to iritis in which dilatation of the pupil may be desirable, and any operation on the iris is likely to fail. He also claims successes in cases where an operation for glaucoma has failed to cure. Böck replies [5] that his remarks applied only to primary glaucoma. At the same time he doubts the utility of glaucosan in any case. There are certainly cases in which it gives rise to more pain than can be tolerated.

THE PREVENTION OF DIPHTHERIA

DURING the last fifty years the death-rate from diphtheria has been more than halved. In the quinquennium 1876–80 the death-rate from diphtheria and croup was 726 per million children at ages under 15 years; in 1926–30 the rate was 302, or but 42 per cent. of the level recorded half a century previously. So great and satisfactory an improvement must not, however, lead to an attitude of complacence. Absolutely diphtheria is still one of the important killing diseases of childhood—in the five years 1928–32 there was an average annual total of 3000 deaths attributed to it, while at the present time the country is passing through an epidemic with an incidence considerably above the average of the past decade. Relatively as well the position is not one for complete satisfaction. While noting that diphtheria has fallen by 58 per cent. in fifty years it must be observed that over the same period of time the death-rate from measles fell by 64 per cent., from whooping cough by 73 per cent., and from scarlet fever by 97 per cent. Of the four major infectious diseases of childhood diphtheria has declined the least. It is clear that methods of prevention energetically pursued may gain substantial rewards, and there is little doubt that artificial immunisation universally adopted offers the most hopeful means of securing them. Some of the evidence in favour of immunisation is presented by Sir Leonard Rogers in the current number of *The Fight Against Disease*, the quarterly journal of the Research Defence Society. From Graham Forbes's monograph [6] he tabulates the results of inoculation of the staffs of various diphtheria isolation hospitals, for this he regards as the most severe test immunisation can be put to, since nurses are exposed to grave danger of infection from the cases they attend intimately and for long hours. Clinical attacks are, naturally enough, sometimes recorded amongst the "protected," but such cases are invariably mild, while in addition nearly every hospital reports an appreciably lower incidence since inoculation of their staff was undertaken. From children's residential institutions there is also abundant evidence that by systematic Schick-testing and inoculation the incidence of diphtheria can be greatly mitigated or almost abolished. The classic work, which Sir Leonard Rogers quotes in some detail, is that of Sheldon Dudley at the Greenwich Hospital School. Here, between 1919 and 1927, there was an annual yearly average of 42 cases; since inoculation there have been only 4 cases in four years, three of which were in "unprotected" children. There seems no doubt that if we could extend immunisation to the majority of the child population the death-rate from diphtheria would show a further substantial decline.

In one particular we must correct Sir Leonard Rogers. He states that "diphtheria is only second to measles as a cause of mortality from children's infectious diseases." He has overlooked whooping-cough, which in every quinquennium from 1866–70 to the present time has shown a considerably higher death-rate than diphtheria and, indeed, in 1921–30 was as a cause of mortality the leader of the four major infectious diseases of early life.

HOSPITAL ADMINISTRATION FOR ALL

THE extent of responsibilities shouldered severally by the superintendent, the matron, and the secretary of a large hospital tend to vary somewhat with the personalities concerned, with their relative length of service and with local tradition. Whatever the distribution of authority, it is of the utmost importance for smooth running that each should know something of the organisation of the departments controlled by the others. For this reason, among others, a book [1] by Miss E. MacManus, matron of Guy's Hospital, entitled "Hospital Administration for Women," will be useful also to men. A light touch and an approach which invites friendly interest conceals the fact that an extraordinary amount of detailed information, largely unobtainable elsewhere, has been packed into its six sections. The first of these deals with personal and central administration and is subdivided into chapters on the work of the superintendent's office, the duties and responsibilities of the matron, and the functions of the various committees generally appointed by the Court of Governors of voluntary hospitals. (The corresponding organisation of a municipal hospital is more briefly stated in an appendix.) In this section a scheme is outlined for a nurses' representative council of 15 members, including the matron, 12 members being elected by probationers and 2 by staff nurses. Such a council, which is established at Guy's and at certain other hospitals, affords the nurses opportunity for making representations affecting their well-being and education, which is greatly appreciated. Matters of personal conduct and discipline are, we understand, specifically excluded from discussion. The following section of the book is devoted to the nursing staff —the administrative hierarchy being clearly defined and their duties in a large hospital of 600 beds described with precision. The chapter on the home sister and the nurses' residence gives explicit directions for methods of promoting the nurses' comfort and convenience in sickness and in health. It is noted that the provision of one definite place where nurses may smoke clears the air figuratively, if not actually. The ward sister, "arbiter of her small kingdom," is

[3] Wien. klin. Woch., Dec. 28th, 1934, p. 1591.
[4] Ibid., March 15th, 1935, p. 335.
[5] Ibid., p. 336.
[6] Diphtheria, Past and Present. London. 1932.

[1] Hospital Administration for Women. By Emily MacManus, Matron, Guy's Hospital, London. London: Faber and Faber. 1934. Pp. 356. 15*s*.

shown in her various capacities: accompanying the house officer on his rounds and carrying out the treatment ordered; feeding the patients; teaching the nurses; keeping the ward orderly and dealing calmly and without fluster with special situations, including anything from confiscation from patients of razors and knives or illicit drugs, and detection of faked pyrexia, to discrimination between two or even three wives who claim the right to sit by the bedside of a dying man. This last situation, as Miss MacManus observes: "requires the wisdom of Solomon, for the obvious solution is rarely the right one, and the legal solution is rarely the happy one." If the patient is conscious, she adds, his wishes should be carried out; it is when he is unconscious that the ward sister's ingenuity may be taxed.

The chapters on the nurses in training and already trained, and the preliminary and hospital training school in Section II show, as would be expected, an intimate knowledge of the complex task of organising the curriculum of a group of young women whose preparation for entry, after examination, to a State register must include previous experience in every important department of the hospital, as well as attendance at lectures and demonstrations. Schedules of quarterly changes of posts, rotas of off-duty times, charts showing distribution of work and time-tables of lectures and classes are set out and will assuredly prove useful to less experienced administrative officers. Section III deals with the domestic staff, including porters; Section IV with works, central power station, laundry, linen stores, dressmaking department, steward's stores, hospital kitchens, catering, and the dispensary; and Section V with schools and associations connected with the hospital, such as schools of massage, medical electricity and actinotherapy, radiography, midwifery, and almoning, as well as with antenatal and postnatal departments, the infant welfare centre, and voluntary workers.

We have already hinted that the title of this work is too modest, and should add that less than half is devoted to the nursing side of hospital life. Almost anyone concerned in hospitals—from the senior member of the consultant staff to the junior recruit in the secretary's office—will do his work the more efficiently if he not only reads it, but keeps it by him for frequent reference.

A NEW HOME FOR THE B.D.A.

THE official opening of the new home of the British Dental Association, described in our news columns, is a proper occasion to recall the part which the Association has played in the progress of dental science and practice. Sixty years ago the conditions under which dentistry was practised in this country were becoming intolerable to those who had the welfare of the profession at heart, and a Dental Reform Committee was formed whose labours culminated in the passing of the Dentists Act of 1878. Their preparatory work done, this body resolved itself into the representative board of the British Dental Association which was finally incorporated in 1880. The first work of the new Association was a scrutiny of the credentials of applicants for admission to the Dentists Register, and this laid bare the fact that the Act had in it a fatal flaw which as the years passed became a menace, only to be removed by the Act of 1921, which finally closed the door to any one who had not passed through the schools and obtained a dental diploma. The Association, which started in 1880 as a centralised body with a membership of 120, had increased its membership by 1884 to 600 by attracting five provincial societies as branches. Branches and membership have grown until there are now 16 branch areas, each divided into sections, with a total membership of 4239, affording opportunities throughout the country for the cultivation of scientific study and social intercourse. Through this organisation broad lines of policy can be submitted to members and a prompt decision reached. The Association has not only raised the profession of dentistry; it has behind it a long record of public dental service, both practical and educative in the popular sense. Fifty years ago there was no school dental service, indeed little of any kind. In 1883 the Government of the time declined to recognise oral hygiene even as coming within the scope of an international health exhibition. The school dental service, imperfect though it still may be, owes its development entirely to the efforts of the Association. Adult dental health has not been disregarded, and when additional dental benefit was instituted the Association prepared a comprehensive scheme of public service making dental treatment available to millions. Persistent representations to the departments concerned have seen fruit in the present complete dental service now provided for the Navy, Army, and Air Forces. All these advances can be studied in the *Journal* of the Association which in March, 1880, took over the *Monthly Review of Dental Surgery*, and has since 1903 been known as the *British Dental Journal*.

MURK JANSEN

THE death of Dr. Murk Jansen, of Leyden, at the age of 67, has deprived orthopædic surgery of one of its outstanding leaders. Jansen was born at Zaandam and came of a line of schoolmasters, but at an early age expressed a desire to choose medicine as his future career. Loyalty to family tradition, however, compelled him to become a teacher of English until the age of 25, by which time he had accumulated sufficient funds to enable him to enter the University of Leyden as a medical student. He graduated in 1900—he was then 33—and for the next four years acted in turn as prosector in anatomy and assistant in the surgical clinics of Leyden and Amsterdam. His interests soon became directed towards orthopædic surgery, and, after settling in practice in Leyden, he was appointed lecturer in this subject in his old medical school. Jansen soon acquired one of the largest private practices in his specialty on the Continent, but he never allowed material success to deflect him from an unceasing inquiry into the science of orthopædics. Aided by an amazing mastery of foreign languages, his unorthodox views on bone formation and on the origin of congenital deformities became known far and wide. Through his regular visits to other countries, Jansen acquired a circle of devoted friends who were attracted both by his powerful intellect and by his innate charm and culture. Amongst his earliest friends in this country were Prof. (now Sir Grafton) Elliot Smith and the late Sir William Thorburn, of Manchester. Later he came under the spell of Sir Robert Jones, which ripened into affection. During the war, when a considerable

number of British wounded became interned in Holland, the Dutch Government applied to our War Office for the services of an orthopædic surgeon. This request was passed on to Jones, who had the pleasure of informing the Dutch Government there was in practice at Leiden one of the most distinguished of living orthopædic surgeons. For his services to our wounded Jansen was awarded the O.B.E. In his earlier efforts to get recognition for orthopædic surgery as an autonomous specialty in the Dutch medical schools Jansen met with strenuous opposition. But he was by nature an uncompromising fighter in any cause in which he believed, and he refused to bow. In 1920 he founded in Leyden the Society for the Deformed, and in 1928 he gave half his private fortune to build and equip a hospital of 60 beds, known as the Anna Kliniek. Before his death Jansen had the satisfaction of knowing that this hospital had been recognised as the official teaching clinic in orthopædic surgery of the University of Leyden. In the same year the Dutch Government conferred upon him the honour of the Knighthood of the Lion. In 1933, on the death of Sir Robert Jones, Jansen succeeded him as president of the International Society of Orthopædic Surgery. The generous hospitality of Jansen and his wife on the occasion of the meeting of the British Orthopædic Association at Leyden last year will be long remembered.

NASCITUR RIDICULUS MUS

THE name of Mickey Mouse drew large and excited crowds to the Royal Society of Medicine last week, and it was once more evident that the medical profession and its wives are only human after all. To serious workers, perhaps, a first disappointment was the discovery that Mr. Robb Lawson, though billed to speak on the anatomy and embryology of the said mouse, was neither anatomist nor embryologist: we were to get no erudite satire on methods current in these sciences. By way of compensation came an illustrated account of Walt Disney's studio technique, and four marvellous films—two Silly Symphonies and two Mice. Mr. Lawson tried to find a sociotherapeutic purpose in these impossible creations, and Dr. Robert Hutchison, in introducing him, compared Mickey to the celebrated Dr. Merryman. It would have been no exaggeration that evening, however, to speak of him as Dr. Riot;[1] for certainly (as he said later) the Barnes Hall has never resounded to such mirth; and we fear the next distinguished lecturer there—even if he provides himself with fly-papers—must expect to fall a little flat after Playful Pluto. As for the embryological aspect, Mr. Lawson kept just enough back to prevent any of us setting up immediately in opposition to United Artists. His audience learnt all about the need for team-work and the troubles of musical directors; they heard about the three kinds of artists and the functions of those who merely copy with a difference; and they were brought to realise the necessity of thinking up plenty of good gags. It was divulged that all the mobile figures are drawn on transparent sheets placed one above the other; they are then photographed and changed where necessary, the background remaining the same; and all this involves some 10,000 exposures for a short film. The truth is that the photography and everything else takes so long that it really seems best to leave the business in the hands of those who like doing that sort of thing. Meanwhile, it is comforting to learn that medical practice is not the only occupation in which success depends on collaboration. No doubt the journals of the Mickey Mouse industry, like those of medicine, constantly contain moving appeals for closer coöperation between the artist, the animator, the artist-animator, and the odd-job man.

[1] Of Messrs. Quiet, Diet and Riot.

A "CAUSE" OF EPILEPSY

SIEVEKING is credited with the statement that there is no substance that can pass down the gullet of man that has not at one time or another been considered a specific for epilepsy. The list of alleged causes of this disorder may not be quite so comprehensive as the list of cures, but its diversity is about as great; and most of the items on it would be better defined not as causes but as factors in the determination of attacks in potential epileptics. And now we have Dr. Pagniez with a convincing account of a brand new one.[1] After a fall on the head a boy had a few typical epileptic fits, followed by several years' freedom. He then began to get attacks of giddiness, headache, and nausea, the nature of which was made clear by the occurrence of a typical major attack of epilepsy. Rigorous examination disclosed nothing abnormal in the nervous system or elsewhere, and dietetic factors were investigated and excluded. After long months of medicinal treatment, which produced amelioration but not cure, the patient one day called Pagniez's attention to his wrist-watch and other silver articles which were always turning black. A search for abnormal sulphur absorption from the alimentary canal was fruitless, but eventually it turned out that the patient had been for some time using a sulphur lotion on his head to prevent his hair falling out. The lotion was promptly stopped; the silver articles ceased to tarnish; and the epileptic manifestations disappeared. It is difficult to doubt the cause and effect suggested in this story, but it is important to recognise that here was a potential epileptic of a high degree of potentiality. At one time a blow on the head, insufficient to cause loss of consciousness or bony damage, determined fits; at another, sulphur absorption through the skin. Very possibly some other effective stimulus may be found for him later on. Still, as it stands, the moral of the story is, as Pagniez points out, that where epilepsy does not respond to ordinary methods of treatment, an inquisitorial and exhaustive survey is called for to exclude any possible determining factor.

[1] Bull. Soc. méd. hôp. de Paris, March 8th, 1935, p. 444.

Dr. Robert Forbes has been appointed secretary of the Medical Defence Union.

AT a meeting of the Royal College of Physicians of London on April 15th, Lord Dawson of Penn was re-elected president.

INSURANCE doctors and chemists regain their standard remuneration on July 1st, when, under Mr. Chamberlain's fourth Budget, the remaining half of the salary cuts of 1931 is restored.

PASSMORE EDWARDS HOSPITAL.—Lord Inverforth has promised £25,000 towards the proposed new building of this hospital which is to cost at least £50,000. The old buildingis very inconvenient, and parts of it are becoming very shaky. The patients received during the past year numbered 1815, which is about the same as in the previous year, and the patients admitted showed a slight decrease.

PROGNOSIS

A Series of Signed Articles contributed by invitation

XLVIII.—PROGNOSIS IN THE SEXUAL NEUROSES

THE difficulty in dealing with this subject is that in the first place there is a certain ambiguity in terminology which makes it necessary to define what we mean by the sexual neuroses; and in the second place there is no one accepted method of treatment for these conditions which enables one easily to assess the results of treatment, and therefore the prognosis. At the same time there is no doubt of the importance of being able to form some judgment on prognosis, since the sexual disorders are, fortunately, in these days being reported to us, as doctors, much more often than they were to our predecessors.

Definition.—It is probable that some would limit rather strictly the number of disorders which could be included under the heading of "sexual neuroses." Prolonged masturbation, impotence, vaginismus, seminal emissions accompanied by anxiety, may be held to be truly neuroses. On the other hand, most medical men, for their own convenience of thought, include under this heading a number of other conditions, notably sexual obsessions, homosexuality, fetichism, sadism, masochism and exhibitionism. In this brief attempt to assess the prognosis, this latter standpoint is taken, and all these conditions, which result either from old emotional conflicts or from warping of the personality in early life, are included. In any consideration of the problem it must be remembered that in fact the sexual neuroses are hardly an entity in themselves. The problem of their prognosis is really that of the psychoneurotic states in general. The majority of these disorders of the sexual life are merely symptomatic of a more general emotional disturbance, and it would almost be a parallel if we were to speak of the prognosis of headache, or any other symptom which may come from one of a number of causes.

Factors affecting prognosis.—There are certain important factors which affect the prognosis in these conditions: age, duration of the symptoms, intelligence of the patient, the degree of desire for cure or for change which the patient experiences, and his social situation, must all be borne in mind as influencing the course of his illness. The severity of the coincident psychoneurotic symptoms may also play an important part in affecting the chances of a recovery under treatment.

The patient who has a philosophy of life, or an ideal which makes him wish for cure, has certainly an advantage over his more hedonistic fellow. It is well known that the homosexual patient, for example, often has no wish to be other than he is, and consequently is never likely to be so. The results of the psychotherapeutic treatment of sexual offenders who are referred from the courts are often very much more disappointing than they are in similar persons who have come of their own free will. It is nowadays a truism to say that all punishment should be treatment, but the converse also holds and occasionally treatment will be regarded as a part of punishment, and therefore resented. Environmental factors will influence the prognosis perhaps more than in any physical disorder. Social conditions are inevitably linked with all these problems of sex. As an example, it is clear that the man who suffers from impotence will find the task of readjustment much more difficult if his wife is unsympathetic or very demanding or querulous. Those who have worked with homosexual patients under ordinary consulting room or hospital conditions, and have also worked with those who are in the process of serving a sentence in prison, will realise that there is a very considerable difference produced by the conditions of prison life and by the general attitude that is likely to be adopted there towards the patient's neurosis.

In the process of weighing up the different factors which affect prognosis one must not be unduly influenced by any one. An intelligent person of 70 who has had a neurosis with a sexual basis for, say, 20 years may get perfectly well. Homosexuality of very long standing may be cleared up sometimes almost as quickly as this condition in the callow, immature youth. Our preliminary judgment on the matter of prognosis, therefore, is only to be arrived at by taking all of the factors into consideration.

TWO GROUPS

It is possible for prognostic purposes to divide the various conditions roughly into two groups. In the *first group* the conditions are, on the whole, less serious and more susceptible of cure by comparatively simple treatment. In this group I would put masturbation, emotional (non-active) homosexuality, many cases of vaginismus, all cases of psychological impotence, mild obsessional states and conditions of seminal emissions with anxiety. All of these are conditions of which, as a rule, the patient wishes to be rid. Few of the patients will need any very serious course of deep analysis, and in all of them one may say that the prognosis is very good provided that the conditions are treated as psychological problems.

Into the *second group* I would put conditions such as active homosexuality; fetichisms (where the sexual impulse has been transferred to some object which is normally non-sexual); transvestitism (the wearing of clothes of the opposite sex); masochism (the achievement of sexual gratification through self-abasement), its converse sadism, and exhibitionism. In these conditions the prognosis is more doubtful. On the whole the patient is not so anxious to be rid of his symptoms, at any rate he is not prepared to pay the price for such a relief in so far as it means giving up pleasure, excitement, and convenience. All the disorders in this group are very deep-seated and their origins usually have to be sought in conflicts and personality problems of the first years of life. For all of them nothing but reductive mental analysis, of which Freudian psycho-analysis is the best-known technique, will be adequate. Without such treatment the victims are very unlikely to recover. Practically all of the patients in this second group can be *helped* by any one with tolerance, commonsense, and some understanding. Every one of them can be helped and improved by psychotherapy, and it is quite certain that a high proportion of them can be, and are, cured permanently by analytical treatment. No psychotherapist or analyst would, however, be so rash as to give a completely optimistic prognosis without some considerable knowledge of the patient.

There is no available evidence as to the course taken by these illnesses in the past, when certainly there were no psychotherapeutic procedures to apply. Such experience as can be obtained from the observation from time to time of cases which receive no treatment, makes it seem that they are unlikely,

on the whole, to right themselves. It is, of course, obvious that some of the simplest conditions like masturbation and simple homosexuality may be "grown out of."

METHODS OF TREATMENT

A change in the general circumstances of the patient which gives him fresh interest and perhaps relieves the strain of his life may, of course, tend towards an alteration for the better in his sexual interests. It is, however, in practically every case an unwise and superficial piece of advice to tell patients to get married or to find other sexual outlets. It is a "hit or miss" method and the failures dwarf the successes. It is also of very little use to give stimulating advice to people to pull themselves together and be normal unless we can tell them how to do it. It can only do harm to create a guilt sense in a patient, or to pour scorn or contempt on him for the particular form of his illness, however antisocial it may be. We as a profession, while well equipped with knowledge of the anatomical and physiological mechanisms of sex, have little knowledge of the functioning of sexuality, save what we acquire for ourselves after graduation. It is just that knowledge and understanding of personality and of psychopathological reactions which can prove effective in dealing with sexual difficulties. Given sufficiently early treatment, which involves insight, knowledge, and tolerance, there is little doubt that the deviations of sexual life could be averted or dealt with before they ever became serious.

Once a sexual neurosis or perversion is established, the prognosis depends mainly on the efficacy of the psychological treatment that is given. Suggestion is a method which is not very radical. It may be of use in a few cases of impotence, or with other recently developed symptoms, but it is unlikely to do anything effective for the more established disorders. Education, or re-education, in matters of the simpler mental mechanisms and on the whole subject of sex is of the greatest value to all these patients. Most of those who seek medical help fall into the first of the two groups suggested above, and are helped mainly by a combination of superficial analysis with re-education. The smaller and more serious group need prolonged, detailed investigation if there is to be any chance of permanent cure.

CONCLUSION

The figures of the follow-up of patients at the Institute of Medical Psychology show that some 69 per cent. of the whole group of psychoneurotics are "greatly improved" or "considerably improved," and remain so. The results in the sexual disorders—i.e., in those conditions where the primary complaint is of some sexual difficulty—show a slightly better figure; about 76 per cent. of them appear to be permanently benefited.

In conclusion, therefore, we are certainly entitled to the belief that prognosis in the majority of the sexual disorders is good, if we exclude mental defectives, and if suitable treatment is available. We are certainly justified in encouraging such patients in the belief that, with help, they can achieve freedom from their symptoms and normality in their sexual life.

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SPECIAL ARTICLES

MINOR EPIDEMICS OF "INFLUENZA"

(EPIDEMIC CATARRH)

A CLINICAL STUDY OF NINE SEASONS, 1924–33

BY G. M. WAUCHOPE, M.D., M.R.C.P. Lond.
ASSISTANT PHYSICIAN TO THE NEW SUSSEX HOSPITAL, BRIGHTON

(*Concluded from p. 881*)

Character of Individual Epidemics

IN considering each year's epidemic as an entity, one recognises that each had its special character or variation. They fall conveniently into three groups:—

(1) Mild.—1925–26, 1927–28, 1929–30.
(2) Moderate.—1928–29, 1930–31, 1931–32.
(3) Severe.—1924–25, 1926–27, 1932–33.

This grouping corresponds partially with the European epidemics given by D. and R. Thomson.[5] Thus 1926–27 and 1928–29 were the most severe generally. The former was the worst of all the local outbreaks, but the latter was in the moderate group. In the locally mild years there were no general epidemics.

MILD EPIDEMICS
(1925–26, 1927–28, 1929–30)

The first group (mild) comprises 63 cases. Reference to the charts of incidence show that in these years the cases were few in number in addition to being mild in character, yet infection spread quickly among members of a household. Disability was of short duration, 80 per cent. of the patients were well in under a fortnight; only 4, who had complications, were ill for more than three weeks. The illness differed in each year of the group.

1925–26 was characterised by nasal catarrh with persistent intractable cough; headache and pains in the limbs were common; in addition to a few cases with definite alimentary symptoms intense nausea was a troublesome symptom.

In 1927–28 sore-throat was the main distinguishing symptom, and although fever was high, recovery was rapid. There were no non-respiratory cases.

In 1929–30 cold in the head and pains in the limbs were part of a very mild illness but it was associated with a rather larger proportion than usual of cases of slight bronchitis.

EPIDEMICS OF MODERATE SEVERITY
(1928–29, 1930–31, 1931–32)

There were 267 cases in this second group. As the charts of incidence show, the illness was fairly extensive, spreading over several weeks. As a whole it was respiratory and of short duration. 47 per cent. of the patients recovered in a week and 34 per cent. in a fortnight. A few cases in each year lingered on into months. Otitis media was the outstanding complication; 23 of the total 35 cases occurred in the three years forming the group, and each year had more cases than any other single year. Other complications were few, except for 35 cases of bronchitis; influenzal cardiac debility occurred in three cases, two in 1928–29 and one in 1930–31; there was one case of rheumatic carditis after tonsillitis on the tenth day of influenza and one of pneumonia in 1930–31.

Each year had its distinguishing character.

1928–29 was the most severe of the three and the incidence reached a sharp peak in the last week of February

(Chart V.). The symptoms were: intense nasal catarrh with streaming eyes and nose, paroxysmal sneezing, epistaxis, noises in the ears, deafness, and shivering. Cough was hard and racking but of short duration. In 9 cases the signs of respiratory catarrh did not appear till the third or fourth day; the patients were first ill with headache and fever, coated tongue, and nausea; one had epistaxis, one epigastric pain, and two pains in the limbs.

1930–31 was the only year in which afebrile cases occurred; neuromuscular pains were frequent and giddiness was a characteristic symptom. Both the respiratory symptoms and the otitis media were milder than in the previous year.

1931–32 was characterised by a comparatively large number of gastro-intestinal cases; 11·5 per cent. were purely alimentary and 31 per cent. in all had gastro-intestinal symptoms; the sickness and diarrhœa were unusually violent. Three patients suffered from prostration and post-influenzal debility which did not occur in any other year of the group.

SEVERE EPIDEMICS

The third group (252 cases) was characterised by a high peak of incidence, severe and dangerous complications and prolonged disability. Ten patients were laid up for over three months as compared with two in the moderate group, whilst 30 were ill between one and three months, compared with 11 in the moderate group. The dangerous complications were first, the so-called toxic myocarditis—10 of the total 14 cases occurred in this group and 7 in one year (1924–25); and secondly, pneumonia, 5 cases with 2 deaths. Bronchitis (24 cases) and otitis media (12 cases) were less frequent than in the moderate group and not more severe. Even in these years, however, the majority of cases were of the usual respiratory type; 37 per cent. of the patients recovered in a week and 30·6 per cent. in a fortnight.

1924–25

This year has been included under Group III. because the heart was affected in 9 per cent. of the cases and the average duration of the illness was greater than in any other year. The chart of incidence (Chart I.) does not show a sharp "peak" but rather a broad "mountain" resembling the moderate years. The cold in the head was extremely severe with paroxysmal sneezing and was associated with sore-throat or gastro-intestinal symptoms in many cases; cough was troublesome but "looser" than the typical influenza cough. Delay in the onset of catarrhal symptoms occurred as in 1928–29 and chiefly in the worst cases. Neuromuscular symptoms were common and prostration was marked, either at the beginning of the illness or in later stages, and the year is particularly remembered for the severe cardiac debility which supervened in certain cases.

1926–27

This was by far the worst epidemic of the series both in the severity of the symptoms and the sudden rise in the number of cases within a short period at the end of January. In fourteen households more than one person was affected accounting for 41 of the 86 cases, or nearly 50 per cent. The character of the illness seemed worse in houses where there were several cases; for instance, four children in one family had high fever and two had otitis media with perforation of the drum; another family of four children were severely ill, one had otitis media, and another consolidation of the apex of one lung; and in a household where five were attacked, two had pneumonia, and one of these died; two others were laid up for long periods and only one had an uncomplicated attack. This was the only epidemic in the series during which doctors kept the latch-keys of the patients' houses, there being no one to let them in.

In 71 (82 per cent.) cases the respiratory tract was the main site of infection, and although the cold in the head, &c., was not so severe as in other epidemics, the general condition was worse. A larger proportion than usual (11, or 12·8 per cent.) were cases of "pure" neuromuscular type, and these were the patients who were the most severely ill and in whom the serious complications such as pneumonia supervened.

Prostration was the feature that distinguished this epidemic from the others in the series; it was very severe in 11 of the non-respiratory cases and in an equal number, but smaller percentage, of the respiratory cases (83 per cent. and 15 per cent. respectively). Delirium occurred in 7 of the uncomplicated cases. This was unusual in the other epidemics and is another sign of a more severe disturbance. The temperature was higher and more prolonged than in the other epidemics. The length of time taken to recover and the two deaths emphasise further the serious nature of the illness. The deaths were both due to influenzal pneumonia, which occurred in three cases. These have already been briefly described.

1932–33

This epidemic was second in severity to that of 1926–27; prostration was marked, recovery was delayed, and two patients died. Chart IX. shows that although the number of cases recorded was almost the same as in the previous "moderate" year, there was a "peak" of incidence in the last week in January in 1933, whereas in 1931–32 the main incidence was spread over several weeks.

The symptoms were chiefly respiratory but were associated in 25 cases with headache and pain in the limbs and in 7 with nausea and vomiting. Two patients complained of pains in the bones of the face, nose, and forehead. Prostration occurred in 19 of the more severe cases, but in contrast to 1927 not especially in the non-respiratory type. The character also was rather different from the prostration of 1926–27 where the patients looked poisoned; in 1933 they appeared to be deprived of vitality for no obvious cause; they felt as though they were dying and could hardly be persuaded that there were no physical grounds for so gloomy an outlook. For example, a woman of 56 lay for weeks with a systolic blood pressure varying between 90 and 100 mm. Hg, and a pulse-rate of 100 per minute. She experienced intense nausea and depression, and it seemed almost a hopeless task to instil even a wish to live.

In this year, alone of the series, all the common complications occurred in a few cases. The two deaths were not exclusively the result of influenza. The first patient, aged 70, was dying of obstructive jaundice and, contracting influenza from others in the house, quickly developed a fatal bronchitis; the other was a woman of 60 who nursed other patients and was over-tired. On Feb. 17th a cold in the head began; on the 19th she had a shivering attack after being out in the rain. The temperature rose to 103° F. with a streaming cold and diarrhœa; she was desperately ill with all the appearance of septicæmia when first seen on the 21st; she had a septic corn on the right foot and developed a red, shiny swelling on the right foot and hand. She died on the seventh day, the temperature reaching 106° F. before death. As no blood culture was made it is not possible to know how far septicæmia from the right foot was responsible for death; but certainly the onset was influenzal.

Discussion

In reviewing the nine epidemics here described, several questions arise.

(1) *Was the illness influenza?*—While there is no agreement as to the relation between pandemic influenza and the "influenza" of inter-pandemic years,[5] it may be noted that although the symptoms are very much the same in both the great and the lesser epidemics, the former are seen only once in a generation and the latter almost annually. One possible explanation of this is that influenza vera (pandemic influenza) confers immunity; and the age-incidence in the last pandemics supports this, for in 1889–90 middle-aged and old people were attacked, while in 1918 those who had passed through the earlier epidemic escaped, but the young were decimated. In this respect influenza vera conforms with the known virus diseases, all of which confer permanent immunity (for example, acute poliomyelitis).

The "influenza" in the present series, on the other hand, conferred only temporary immunity. Reference to the charts of incidence shows that relatively severe epidemics occurred only in alternate years, and that in the intervening years there were very few cases; 1931–32 was an exception. In individual cases an attack seemed to render the patient more susceptible. (See under "Length of Illness.")

Therefore, although the similarity of the symptomatology supports the view that the annual or biennial epidemics are milder forms of the great pandemics and present individual cases which cannot be distinguished—for example, even the toxic cases of 1918 were imitated in 1927—yet the evidence of immunity seems to separate them. The question awaits bacteriological proof, and the symbiotic theory emphasised by D. and R. Thomson [5] offers a promising solution, viz., that pandemic influenza is a virus disease [6] and that there may be a heavy infection with *B. influenzæ*, pneumococci, or streptococci at the very beginning of the disease—i.e., too soon to be regarded as a secondary infection; that the bacteria and the virus increase each other's virulence causing severe pandemic influenza; that the concomitant bacteria are pathogenic and may cause primary infections of the respiratory tract without the aid of the virus" (inter-pandemic influenza). They point out that the bacterial infections are more common in the winter, and that the first wave of the 1918 epidemic occurred in the summer and was mild; the second wave came in October–November when the bacterial respiratory diseases were beginning and had a great mortality, the inference being that the first wave was a pure virus influenza, and the second wave due to symbiotic virus and bacterial infection.

(2) *Were the nine epidemics all the same illness?*—They had certain characters in common. For example, the sudden onset, the fever, the catarrhal symptoms, and the comparatively short duration; certainly the respiratory type of illness which was the foundation and background of each epidemic was much the same every year, though differences were found in the severity of the symptoms and the part of the respiratory tract which was chiefly affected, the nasal passages, the throat, and the trachea bearing the brunt in turn. And yet each year's illness had its distinguishing characteristic, so that even when patients had several attacks their illness followed the prevailing type and was not peculiar to the individual as a cold in the head usually is.

The differences were made more conspicuous by the non-respiratory cases, by the presence or absence of prostration, and by the nature of the complications.

(3) This leads to a third question: *Are the alimentary and neuromuscular forms due to the same infection as the respiratory type?*

(*a*) It is often denied by surgeons and consulting physicians that "gastric influenza" exists; they believe that the cases so diagnosed are really appendicitis or cholecystitis. But most of those who have observed epidemics of influenza recognise it,[5] and in the present series both respiratory and alimentary cases were seen in one household while individual cases combined respiratory catarrh with gastro-enteritis; and further, it is hardly to be supposed that in one practice 27 cases of appendicitis or cholecystitis occurred and subsided spontaneously in the course of a few weeks (1931–32). (*b*) The neuromuscular type is not so suspect because aching head and limbs are recognised as part of "influenza" and it is not difficult to accept a form of the illness in which they occur without respiratory catarrh.

It is almost impossible to draw a line between any of the respiratory epidemics and to say that one was and another was not "influenza," and if the identity of the respiratory type is accepted there are two possible answers to question (3).

(i) The respiratory tract, comprising the nose, pharynx, trachea, and bronchi, is the normal site, the severity and actual point of attack being variable; the gastro-intestinal tract and neuromuscular system are also vulnerable, though in a lesser degree by the same virus. The illness in all the epidemics is therefore the same and the non-respiratory forms are variations.

(ii) The non-respiratory type of illness is determined by a secondary or symbiotic infection, and is a complication of "influenza."

The first is the more probable on clinical grounds.

(4) The fourth question concerns complications and may be thus stated: *Which of the concomitants of respiratory influenza are true complications?*

Bronchitis occurred every year and was probably an extension of the "influenzal" respiratory infection, but pneumonia and otitis media only in certain years. Glover [3] points out that these two complications are secondary epidemics and may or may not occur. They are almost certainly due to a supervening or symbiotic infection. Cardiac debility, on the other hand, appears to be a consequence of the influenza alone, and may be a true "variation" like the gastro-intestinal and neuromuscular manifestations, or may bear the same kind of relation as diphtheritic cardiac toxæmia bears to the Klebs-Löffler infection. It certainly occurs in the more severe epidemics and in patients who appear "toxic." Prostration usually appears earlier in the course of the illness than recognisable cardiac weakness. Sometimes it marks the actual onset. The only explanation seems to be an overwhelming toxæmia.

To sum up the position, so far as it can be ascertained on clinical grounds alone, the complications, or supervening secondary lesions, occurring in these epidemics were (*a*) pneumonia, "toxic" or streptococcal and lobar; (*b*) otitis media; and (*c*) the sporadic complications already enumerated. Bronchitis was an extension of the original infection and was similar to gastro-enteritis and the neuromuscular manifestations. Cardiac debility and prostration were either extensions of the original infection to the heart and nervous system—and it is to be noted that prostration was more common to the neuromuscular cases—or were due to "toxæmia."

TREATMENT

No mention has been made of treatment, because the object of this study has been to depict the character of the illness as it occurred from year to year; the treatment was symptomatic and certainly did not influence the type of the illness; it is doubtful if it altered the course and the complications. Mixed vaccines from pneumonic sputum were given in large doses to a few patients in 1927 but only in the worst cases, and there were not enough controls to assess their value.

Prophylactic vaccines have been given to many patients with satisfactory results, but in so far as they were effective in preventing influenza the cases are necessarily excluded from this survey, and there is no evidence that the illness was modified.

Summary

Nine minor epidemics of "influenza" have been described and illustrated by charts of incidence. Clinically the illness occurred in three forms—respiratory, alimentary, and neuromuscular. It has

been shown that in these epidemics, although the main type was respiratory and was more or less similar from year to year, each season's illness showed individual variations in incidence, severity, complications, and in aberrant types. The relation of these catarrhal epidemics to true influenza has been discussed and the ætiology of variations and complications.

It is a pleasure to thank Dr. Robert Hutchison for his helpful criticism.

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UNITED STATES OF AMERICA

(FROM AN OCCASIONAL CORRESPONDENT)

HEALTH INSURANCE AGAIN

A SPECIAL session of the house of delegates of the American Medical Association, called at the request of the board of trustees, met in Chicago on Feb. 15th and 16th and passed this resolution:

The house of delegates of the American Medical Association reaffirms its opposition to all forms of compulsory sickness insurance whether administered by the federal government, the governments of individual States or any individual industry, community, or similar body. It reaffirms also its encouragement of local medical organisations to establish plans for the provision of adequate medical service for all the people, adjusted to present economic conditions, by voluntary budgeting to meet the costs of illness.

Concerning which the *Survey* remarks that beneath the rather heated language there lies a shift that is rather surprising. "The Association's stand," they add, "for voluntary 'budgeting' plans under the direction of local medical organisations strongly resembles recommendations of the Committee on the Costs of Medical Care which the Association dubbed socialism and communism when they were made a little more than two years ago."

Since the meeting of the house of delegates the important State medical society of California, at a meeting of its house of delegates on March 3rd, has adopted a resolution frankly favouring the compulsory health insurance. It recommends legislation "to establish a health insurance system, mandatory as to certain population groups and voluntary as to certain population groups, which shall include the following principles: (1) The patient shall have absolutely free choice of physician and hospital. (2) The medical profession shall determine the scope, extent, standards, quality, compensation paid for, and all other matters and things related to, the medical and medical auxiliary services rendered under the system. (3) There shall be no provision for cash benefits. (4) The patient shall receive adequate treatment and his physician shall receive adequate compensation."

RURAL PUBLIC HEALTH SERVICE

A very large part of the rural population in this country has never enjoyed the advantage of public health service by full-time (even though untrained) health officers. For years the effort of the Foundations and the U.S. Public Health Service has been to persuade county administrations to employ a "full-time unit"—i.e., at least one public health officer and one public health nurse. The depression has naturally arrested progress in this direction. A compromise with this ideal appeared when certain States began to encourage the formation of districts by legislation permitting two or more counties to pool their resources for the employment of full-time health officers. Two such districts have just been opened in Michigan, each of them comprising three counties. Michigan will now have 38 out of its 83 counties under full-time service. The Ellis Health Law adopted by Georgia a year or so ago makes provision for this same type of district administration. But in both of these States the provision for districts is permissive and not mandatory. The New Mexico legislature of 1935 has gone a step farther in dividing the entire State into 10 health districts and providing that each shall be under the supervision of a full-time health officer. At the same time they have amended the former law so that a levy of one mill (one dollar in each 1000 dollars of assessed property value) is made mandatory in each of the 31 counties and the proceeds go into the county health fund which can only be expended on vouchers signed by the district health officer. Each county will thus have at least one full-time public health nurse, and if some federal aid is granted on the basis of the Security Bill now pending in Congress, each county will have a clerk and a sanitarian (sanitary inspector) as well. The new law has the effect of removing local health work from the domain of political patronage and creates conditions which will encourage health officers to take post-graduate study in public health as an opening to a career.

MATERNAL MORTALITY

In spite of repeated unfavourable comparisons between the maternal mortality of this country and European States, and in spite of various local studies which show that a large number of maternal deaths are preventable, there have always been those who took comfort in the argument that maternal mortality-rates as between one nation and another are not comparable. American statistical practice, it was argued, attributed to "puerperal causes" a number of deaths which in other countries are differently assigned. The complacency of these medical patriots will be rudely shaken by a study made by Dr. Elizabeth Tandy,[1] which has already received some notice in your columns (March 30th, p. 758). Duplicates of 1073 actual death certificates obtained from the U.S. Census Bureau were furnished to 16 countries abroad, and the proper statistical officers classified them according to the procedure in force in each country. The methods of assignment in Australia, Netherlands, New Zealand, and Scotland are similar to our own: their rates are comparable with ours. Under the procedure of Denmark our rates would be significantly higher than those published. Under the procedures of Canada, Chili, Czechoslovakia, England and Wales, Estonia, France, Irish Free State, Italy, Northern Ireland, Norway, and Sweden, the rates of the U.S.A. would be somewhat lower. But it is found that the difference is small, and our relative position remains high under all circumstances.

[1] Tandy, Elizabeth C.: Comparability of Maternal Mortality Rates in the United States and Certain Foreign Countries: a Study of the Effects of Variations in Assignment Procedures, Definitions of Live Births, and Completeness of Birth Registration. Government Printing Office, Washington D.C. Pp. 24. 5 cents.

Even if the method assigning the smallest number of deaths to puerperal causes is applied to our death certificates the United States rates would still exceed those of all countries except Australia, Canada, Chili, and Scotland. It is now indisputable that "the United States retains an exceedingly high rate as compared with other countries."

PARIS

(FROM OUR OWN CORRESPONDENT)

UNDULANT FEVER IN FRANCE

SOME years ago Prof. Nicolle described undulant fever as a disease of the future. It was not recognised in France until 1909, but by the autumn of 1932, when the Mediterranean Hygiene Congress was held in Marseilles, an official circular put the annual total at the imposing figure of 3000 cases. Next June the brucellar infections are to have a congress all to themselves—the Premier Congrès des Brucelloses—at Avignon.

There seems to be no doubt that undulant fever is spreading, in more senses than one. Geographically, it has now extended from the Mediterranean littoral up the Rhone and to the Pyrenees and Alps. And not only are the numbers of human and animal cases growing in the infected areas, but cattle as well as goats and sheep are becoming reservoirs of the disease. In 1930 a research centre was established at Montpellier on the initiative of the Bertrand Bouisson Institute and the Rockefeller Foundation, and according to a report on its activities by Dr. R. M. Taylor, Dr. M. Lisbonne, and Dr. L. F. Vidal, in the February number of the *Mouvement Sanitaire*, it should be possible to reduce the number of human cases in which infection is due to the consumption of milk and its products and not to contact with infected animals. The boiling or pasteurisation of milk, before it is consumed as such or converted into cheese, is most certainly desirable and should not prove difficult, but the problem of protecting human beings in contact with infected animals is much less easy to solve. In theory, careful washing and disinfection of the hands after every dangerous contact should prove effective, but at the present time the unsanitary condition under which human beings and animals live together in the south of France are very discouraging to the public health reformer. As for the action of vaccines hitherto prepared, the experience of the Montpellier centre with regard to both human beings and animals is not particularly promising, the immunity acquired by vaccination having so far proved comparatively feeble. It is, however, recommended that the vaccination of human beings be continued among rural populations which are less exposed to massive infections than are the laboratory workers whose reaction to such vaccination has been studied at Montpellier. The ideal solution would, of course, be vaccination of animals which protected them against not only abortion, but also infection. No reliable vaccine for this purpose has yet been prepared; the employment of such living vaccines for cattle is not without its dangers, and the authors have observed two cases of undulant fever due to *Br. abortus*, the source of which can almost certainly be traced to the handling of a vaccine destined for cattle. The alternative of a sanitary cordon around the areas already infected should be feasible. As far as the health of human beings is concerned, it is infection with *Br. melitensis* which must be combated by measures destined to keep the disease within its present geographical limits.

BUDAPEST

(FROM OUR OWN CORRESPONDENT)

A MEDICAL CONSTITUTION

THE long disputes over the regulation of the medical profession have entered a new phase with a Bill now before the National Assembly. On a regional basis the profession will be divided into chambers having between 100 and 1000 members; there will be three in Budapest. Among other things these chambers are to regulate the minimum fees for medical work and establish benevolent funds. Each will send on two members to the national medical chamber which will make regulations about professional discipline and ethics and will also found various welfare institutions. The disciplinary offences include negligence, unprofessional conduct—that is to say, violation of the authority of the medical order or vocation by unsuitable behaviour or an anti-national attitude—and failure to pay fees to the chamber for two years. The punishments include reprimand, fines of 10 to 1000 pengös (12*s.* to £60), and temporary or permanent suspension from practice. A doctor may also be suspended from practice if an action is brought against him in a criminal court.

The Hungarian medical profession in general has received the news of its new constitution with cool indifference, though a group are protesting because they consider that the disciplinary rules are too severe and the advantages offered meagre. They particularly object to the rule suspending a doctor against whom a criminal case is pending, for he may well prove to be innocent. They also consider that in the present plight of the medical profession, in which, as I related in your issue of March 30th, at least a third of our private practitioners cannot earn even a very modest livelihood, it is not fair that non-payment of chamber fees for two years should lead to cancellation of membership—which is equivalent to removal from the medical register.

ADVERTISEMENT OF PHARMACEUTICAL PREPARATIONS

According to the new Bill drugs and chemicals which are included on the list of official drugs, and which must therefore be included in the stock of every pharmacist, even those in the most remote villages, may not be advertised in lay journals, on posters, or in leaflets which are distributed to the public, but they may be freely advertised in professional journals. Articles describing the use of new drugs and new methods may not be published, and interviews to the lay press on drugs which are still being used experimentally should not be granted. A new preparation may be described once, on its introduction, and then only by a medical man in a professional journal. Where a discovery is very important, however, it is permissible for directors of reputable clinics to make statements to the lay press in general terms and with the object of correcting erroneous or sensational inferences. In these circumstances names must not be mentioned.

A DERMATOLOGICAL CONGRESS

Though it is to be regretted that the present financial depression has not yet permitted the formation of an international dermatological association, the delay will make more memorable the ninth international congress which is being held in Budapest from Sept. 10th to 21st. Renewed efforts are to be made at it to form an association, and a number of important committees are meeting to consider

technical, administrative, social, and professional aspects of dermatology on the two days preceding the scientific meeting. They will discuss the reform of dermatological terminology (chairman, Prof. J. H. Rille of Leipzig); the classification of skin diseases (chairman, Prof. Howard Fox of New York); the teaching of dermatology (chairman, Prof. H. Gougerot of Paris); the foundation of an international dermato-venelogical scientific exchange centre (chairman Dr. Tomnasi of Palermo); and dermato-venereological medical practice (chairman, Sir Ernest Graham-Little of London). On these subjects they will submit reports and proposals to the final session of the Congress. The official languages of the congress are English, French, Italian, and German, and the English secretary is Dr. A. M. H. Gray, 69, Harley-street, London, W.1.

AN ACCIDENT WITH THALLIUM

A terrible example of inaccurate prescription-writing has lately been before us. A professor in the agricultural high school in Czegléd consulted Dr. X., a lecturer in the University of Budapest, for a fungoid scalp disease of his nine-year-old twin sons. Dr. X. prescribed thallium acetate to bring about depilation, but instead of 0·5 g. he wrote 5·0 g., with the signature: "To the hands of the physician." The pharmacist saw that the prescribed dose was far above the maximum but assumed from the signature that the remedy (which was new to him) would be used externally. Accordingly he put up the powder, as prescribed by the Hungarian pharmaceutical law, in a hexagonal bottle; that meant that it was intended only for external use. Dr. X. himself administered the drug to the children and they both died, after sufferings lasting five days. The police demanded an autopsy and this revealed that the cause of death was overdose of thallium. Although this drug is not official yet in Hungary, it nevertheless appears in the new list and its maximum dose is given as 8 mg. per kg. of body-weight. As the children weighed 30 kg., each should have been given 24 cg.—that is to say, about 0·5 g. was required for the two. Dr. X. had previously administered thallium successfully in 344 cases, but that did not save him from disastrous error.

GRANTHAM HOSPITAL.—The new extension has been finished and the patients and staff have moved in. The old building is now being modernised, and when the work is finished the institution will have 100 beds. The official opening is to be in June.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—Forthcoming courses include dermatology at St. John's Hospital, Leicester-square (April 29th to June 2nd); medicine, surgery, and gynæcology at Royal Waterloo Hospital (April 29th to May 11th); thoracic surgery at the Brompton Hospital (May 13th to 18th); chest diseases at the Brompton Hospital (two afternoons weekly, from 5 to 6.30, in June); chest and heart diseases at the Victoria Park Hospital (two afternoons weekly, 6 to 7.30, during June); clinical and pathological course at the National Temperance Hospital (Tuesdays and Thursdays, June 11th to 27th) 8 P.M.); week-end courses will be given as follows: cardiology at the Victoria Park Hospital (May 4th and 5th); chest diseases at the Brompton Hospital (May 11th and 12th); fevers at the Park Hospital, Hither Green (June 15th and 16th); obstetrics at the City of London Maternity Hospital (May 25th and 26th). A supper dance and cabaret is being arranged to take place at Claridge's on Wednesday, June 5th, at 9.30. Courses of instruction arranged by the fellowship are open only to members and associates, with the exception of the dermatology course. The secretary of the fellowship may be addressed at 1, Wimpole-street, W. 1.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Comdr. O. D. Brownfield, O.B.E., to *President* for Royal Tournament.

Surg. Comdr. F. C. Hunot placed on the Retd. List, at own request, with rank of Surg. Capt.

Surg. Lt.-Comdrs. H. J. McCann to *Curacoa*, and H. G. Wells to R.N.B., Portsmouth.

Surg. Lt. G. D. Wedd to *Dauntless*.

Surg. Capt. R. C. Munday, C.B., R.N., retired, has been awarded the Greenwich Hospital pension of £50 a year in the vacancy created by the death of Surg. Capt. H. E. South, R.N., retd., on March 10th.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Comdr. W. H. Butcher to R.N. Hospital, Chatham.

Surg. Lt. G. M. Tanner, promoted to Surg. Lt.-Comdr.

Surg. Lts. D. W. Bawtree to *Iron Duke*; and C. Seeley to *Pembroke* for R.N. Hospital, Chatham.

Proby. Surg. Lt. P. G. Burgess to be Surg. Lt.

ROYAL ARMY MEDICAL CORPS

Capt. J. T. Robinson, M.D., R.A.M.C., is granted the local rank of Maj. whilst employed with the Trans-Jordan Frontier Force. (*Vide* THE LANCET, March 23rd, p. 704.)

REGULAR ARMY RESERVE OF OFFICERS

The undermentioned, having attained the age limit of liability to recall, cease to belong to the Res. of Off:—

Col. E. L. Moss, C.M.G., M.C. (late R.A.M.C.).

Lt.-Col. M. Keane, O.B.E., R.A.M.C.

TERRITORIAL ARMY RESERVE OF OFFICERS

Capt. R. A. M. Scott, from Active List, to be Capt.

ROYAL AIR FORCE

Group Capt. H. A. Hewat to Headquarters, R.A.F., Halton, for duty as Principal Medical Officer, vice Group Capt. F. C. Cowtan.

Squadron Leaders G. H. H. Maxwell to No. 5 Flying Training School, Sealand, for duty as Medical Officer, and V. R. Smith to Headquarters, Inland Area, Stanmore, for duty as Deputy Principal Medical Officer.

Flight Lts. H. Penman and F. I. G. Tweedie to No. 1 Flying Training School, Leuchars.

Flying Offrs. C. A. Lewis to No. 2 Flying Training School, Digby; W. G. S. Roberts to No. 6 Flying Training School, Netheravon; A. W. Smith to No. 3 Flying Training School, Grantham; G. H. Stuart to Central Flying School, Wittering; J. S. Wilson to No. 5 Flying Training School, Sealand.

Dental Branch.—Wing-Comdr. C. L. Colbran, O.B.E., is promoted to the rank of Group Capt.

RESERVE OF AIR FORCE OFFICERS
SPECIAL RESERVE

Flying Offr. J. L. Howland Easton is promoted to the rank of Flight Lt.

INDIAN MEDICAL SERVICE

Lt.-Col. G. L. Duncan retires.

DEATHS IN THE SERVICES.

Lt.-Col. William Hooper Pinches, R.A.M.C. (retd.), who died on April 9th in London, at the age of 73, qualified M.R.C.S. Eng. in 1884, and obtained his first commission as a surgeon in the following year. He became a major in 1898, lt-colonel in 1905, and retired in 1906. He served with the Hazara expedition in 1891, receiving a medal with clasp; accompanied the expedition to Dongola in 1896, and received the 4th class Medjidie and the Egyptian medal with clasp. He also served with the Nile Expedition in 1898, and took part in the charge of the 21st Lancers at the Battle of Omdurman that year, being mentioned in despatches. He served in the South African War 1899–1902, and was awarded the Queen's medal and the King's medal, each with two clasps. In 1918 he was employed in the Ministry of National Service.

PARLIAMENTARY INTELLIGENCE

OSTEOPATHS BILL

Select Committee's Inquiry

(*Continued from p. 900*)

THE Committee's inquiry continued on Friday, April 12th, with Lord AMULREE in the chair.

Withdrawal of the Bill

Mr. THORPE, K.C., principal counsel for the promoters, addressing the Committee said :—

This is the twelfth day of our appearance before your Lordships and I understand that after to-day your Lordships will adjourn for a period. I should be lacking in my duty to my clients and my duty to your Lordships if I did not explain my position. You will remember that on the first day of our proceedings, when I opened the case for the Bill, I indicated the way in which I would ask that the Bill should be considered. I said that there were people called osteopaths who were practising, and that whereas there was no distinction between the qualified and unqualified osteopath it was desirable that a register should be formed and a standard laid down by Parliament as to the qualifications that would entitle a man to be registered, and thereafter Parliament should say what duties those who were registered should be allowed to perform. In the course of the inquiry it became inevitable that a different issue should be presented. That issue, as I understand it, took this form, that it was desirable before such a register was granted that the osteopaths should prove scientific justification for their theory. I think I am quite fair in saying that that was the main point taken by the medical profession. That being so —and I do not think I could have resisted it—we get into this position, that your Lordships were asked to make a finding on a matter which at any rate is beyond some of your Lordships. When I try to find out the merits of this matter I find I am reading a language which I do not understand and that it is completely beyond me. So if we are to wait till your Lordships have decided that matter, we may be here longer than we at present anticipate.

The Bill as originally put forward, or the Bill as now presented by us, requires for its main structure the existence and continuance of the British School of Osteopathy. You will remember that Dr. Macdonald in his evidence said he himself was not satisfied with the standard taught by that school, and as the school now existing forms such a material part of the Bill I do not feel justified, and my clients do not feel justified, in asking your Lordships to pass the Bill with that school as it is at present constituted, occupying that position in the new organisation. That being so my clients say that we should not be justified in asking your Lordships to pass this particular Bill. I would not like to find myself in the position of trying to induce your Lordships to pass something which we believe to be fundamentally unsatisfactory. But I hope that your Lordships will not think that the osteopaths have lost any faith in the theories for which they stand. You will remember that Dr. Macdonald and Mr. Streeter both said publicly that they would welcome any inquiry and that they were prepared to take up any challenge made against them for the purpose of proving their doctrines to be scientifically sound. The position altered considerably, I think, when Sir Norman Walker was before your Lordships and said that he would have no objection to an investigation. [The relevant evidence was quoted; see THE LANCET, April 13th, p. 895.] We also had the evidence of Sir Arthur Robinson, who expressed the considered opinion of His Majesty's Government and stated that it appeared to the Minister of Health that a sufficiently strong case had not been made out for the adoption of the proposals of the Bill at the present time, and that the proper action at present was to set on foot an organised and careful scientific inquiry into the theory and practice of osteopathy by a properly constituted authority. [See THE LANCET, April 13th, p. 897.] This is a policy which I earnestly pray your Lordships will feel disposed to accept. I am instructed to say that immediately a voluntary register of osteopaths will be formed and that as soon as possible a School of Osteopathy qualified in the views of the osteopaths to give a proper training will be constituted and a clinic will be brought into operation. It is not for me to do more than to urge respectfully upon the Committee that an inquiry in the form of a Royal Commission or some equally responsible body should be asked to consider the scientific justification for the theory and practice of osteopathy. That is naturally in the Committee's discretion. May I suggest that the gentlemen who have already expressed their condemnation of osteopathy in the statement which has been placed before your Lordships, qualified though they may be to judge in this matter, would not be the best judges on a question which one hopes and anticipates that such a Commission will approach with an open mind.

Whatever may be the merits of this case I should like in public to make this claim, that the present Bill and the present inquiry have been asked for and promoted by the osteopaths themselves. One of the medical witnesses suggested that their cause was fraudulent. I would like to recall that it was the osteopaths with the assistance of the noble Lord (Viscount Elibank) who have come into the open and urged the presentation of this Bill in Parliament. They have satisfied at any rate one noble Lord, and they are ready to submit with confidence to any issue which has to be decided hereafter by an impartial tribunal. I thought it right to say what I have said at this juncture. It seems to me that the alternative will be the hearing of evidence on behalf of the medical and other professions, directed to an issue which is perhaps not an appropriate issue for your Lordships to consider. As far as this Bill is an issue before your Lordships I am instructed to say that in its present form we do not press it upon your Lordships. I have had an opportunity of speaking to the noble Lord who introduced the Bill in your Lordships' House and I have spoken with his authority.

ATTEMPTS TO CLARIFY THE POSITION

Mr. RADCLIFFE, K.C., counsel for the Royal College of Surgeons of England, the Royal College of Physicians of London, and other objectors to the Bill, said that if the Bill was no longer being promoted there was no longer any scope for him to call further evidence. If some recommendation was being asked for from the Committee in favour of an inquiry or a Royal Commission, he felt bound to state that the further evidence that the Committee would have heard would have been directed towards passing very severe comments on the scientific value of the suggested evidence in the Still Bulletins. If that evidence was not called he hoped that it would not be taken that the very eminent medical gentlemen who would have given evidence considered that there was evidence of any scientific value at all in these Bulletins in favour of osteopathy.

Mr. THORPE said that he was sorry that his learned friend had thought proper to say that. If their lordships decided not to pursue the matter further he took it that there would be no finding at all one way or another on the issue whether osteopathy was founded on a scientific basis or not and that they would part, neither party claiming a victory.

Mr. DICKENS, counsel for the British Medical Association, said that he did not want to depart from the general attitude of amiability in this matter. If Lord Elibank and the other supporters of the Bill were going to withdraw their support from it there was nothing left for their Lordships to consider.

Mr. THORPE : I was not speaking for Lord Elibank.

Mr. DICKENS : I want to know. Surely my clients are entitled to know whether the Bill is to be proceeded with or not.

Decision to hear Two more Witnesses

After the Committee had consulted in private the Chairman announced that having heard the statement of counsel they had decided to hear two more witnesses—Sir Henry Dale and Dr. Graham Hodgson.

In answer to the CHAIRMAN, Mr. THORPE said he did not propose to cross-examine the last witness

(Mr. SOUTTAR), but it was not to be assumed that he accepted his evidence.

Dr. Graham Hodgson Examined

Dr. H. K. GRAHAM HODGSON said that he was an M.R.C.P., held the D.M.R.E. Camb., was examiner in radiology for the Conjoint Board, a university teacher in radiology at the Middlesex Hospital Medical School, and a practising radiologist. He had had an opportunity of examining the radiograms which Dr. Macdonald had produced to the Committee and he had read Dr. Macdonald's evidence. There were three cases described in seven radiograms. All of the radiograms showed curvatures or other abnormalities of the spine. There was, according to his experience, nothing novel in the abnormalities shown. They were the sort of abnormalities which he saw week by week in his practice, and were the kind which orthopædic surgeons constantly treated by orthodox methods.

COUNSEL: Before this inquiry opened you had heard of osteopathic lesions?—Yes.

Had you ever been able to discover what exactly was meant by the osteopathic lesion?—I tried to on every occasion when I came across a case which had gone on to an osteopath after being treated by an orthodox doctor. In most of those cases I endeavoured to find out what exactly the interpretation was that the osteopath put on the film which I had taken, but I could not understand what exactly was meant by an osteopathic lesion until I read Dr. Macdonald's recently issued book "The Scientific Basis of Osteopathy."

Since you have read that book you think you understand what is meant by an osteopathic lesion?—Yes, I think I do.

CRITICISM OF INTERPRETATION OF RADIOGRAMS

Shown examples of radiograms supplied by Dr. Macdonald, the witness said that there was nothing unusual about them. They were all examples of ordinary curvature of the spine. Referring to a radiogram of the fifth lumbar vertebræ which it had been suggested was a good example of an osteopathic lesion, the witness said that there was nothing wrong with the fifth lumbar vertebræ. It was merely a case of the way the radiogram was taken. A radiologist had to centre over exactly the same spot every time, otherwise the radiograms were not comparable. In one of the two radiograms, which were taken at different periods, the tube was centred at one point and in the other it was centred three inches above that point. Therefore the radiograms were not comparable. One was a bad radiogram and the other was a good one.

The witness added that Dr. Macdonald talked about "the tilting of the pelvis." The pelvis (Dr. Hodgson commented) was tilted because the hip joints were tilted. The inference drawn from the radiograms was thoroughly unsound.

Counsel proceeded to quote from "The Scientific Basis of Osteopathy" as follows:—

"It is rare that the stereoscopic film fails to show a lesion which is palpable to the fingers. It is true that bony maladjustments are sometimes absent in the film when they are considered to be present by the evidence of the palpating fingers; in such cases the X ray film nearly always shows the localised œdema or fibrosis which is responsible for giving the deceptive findings on palpation."

The witness was asked for his comments on that passage. He said that the radiograms put in to demonstrate these lesions were simple adolescent curvatures of the spine which had been recognised by the medical profession for ages. The ages of the patients were 15, 20, and 23.

EXPERIMENTS TO TEST CLAIMS

On seeing the statement quoted the witness determined to carry out a series of experiments to test the truth of that claim. Since localised œdema was simply waterlogging of the soft tissues of the body as a result of strain or neighbouring inflammation, he decided to make an artificial œdema: he took a piece of steak 1¼ inches thick and cut from it two sections, each weighing 1¼ ounces. He then injected into one piece of the steak as much water as he could get into it, using a hypodermic syringe, and increasing its weight by 50 per cent. Both ends of steak were placed in relation to the spine and X rayed, and no difference in density of shadow could be detected. A radiogram of the result was exhibited to the Committee.

It was impossible to detect a small collection of fluid by X rays in this situation, through the whole thickness of the body. Dr. Hodgson described a further experiment in which he took radiograms of his butler's stomach before and after the latter had drunk a pint of beer. The fluid was not visible in the radiogram.

COUNSEL: As far as you have been able to test it the claim made by Dr. Macdonald is not scientifically accurate?—I am quite sure it is not accurate.

If it were true it would be of great importance to science?—It would be a tremendous help. For years experimental work was carried out in order to try to visualise the gall-bladder by finding a dye which we could introduce into the gall-bladder to make it opaque to X rays. A gall-bladder may contain an ounce of bile, but it is quite impossible to X ray it in the ordinary way. In his book Dr. Macdonald says with regard to these cases of œdema that it is only a very small effusion, perhaps a teaspoonful. In an experiment I injected as much as 40 teaspoonfuls of fluid into or alongside the spine of a corpse and could not see it in a radiogram, and he claims to be able to see something like a teaspoonful.

The claim is important in regard to the existence or non-existence of the osteopathic lesion?—I think it is of fundamental importance.

Did you go into the question of fibrosis?—Yes. I took a patient who had had seven major abdominal operations. The abdomen was simply covered with scars. I took an X ray and no scars whatever were apparent. Perhaps Dr. Macdonald will tell me where the scars were. I then took quite a thick tendon from the back of the heel, placed it on the abdomen, and X rayed the patient. There was no sign whatever in the radiogram.

Dr. Hodgson added that Dr. Macdonald also pointed to a shadow which he called fibrosis of the lateral ligaments of the spine. That could not be the case because there were no lateral ligaments of the spine. There were anterior and posterior and other ligaments of the spinous processes, but no ligaments on the side of the spine, because it was there that the vessels and nerves came out which Dr. Macdonald talked such a lot about.

In answer to a general question witness said he had never detected, in his experience, which included the examination by X rays of hundreds of cases of abdominal conditions every year, any relation between lesions of the spine and abdominal disease, and could hardly have missed evidence of such a relation if it existed.

Dr Graham Hodgson Cross-examined

Cross-examined by Mr. THORPE, witness said that the duration of exposure did not affect the results under discussion. From the radiographic point of view an artificial œdema, simulated by massaging the muscles of the back of a corpse into which fluid had been injected would produce just the same effect as œdema in a living person.

INTERPRETATION OF RADIOGRAMS

In answer to Lord DAWSON, witness said that it was technically impossible to discern by X rays infiltration of fluids along the soft tissues by the side of the spine.

Asked about interpretation, the witness said that a radiogram could not lie, but the radiologist might misinterpret it.

What occurs to you to be the story told by an X ray photograph may not be the story conveyed to another medical man?—No, of course not. You may have differences of opinion. But on a condition such as this we are talking about, œdema, there is not one radiologist in this

country who would agree with what Dr. Macdonald has said.

Would all the radiologists in England arrive at the same conclusion as you have arrived at from that picture? —Yes, I am quite certain of that.

WITNESS criticised Dr. Macdonald's interpretation of a radiogram showing spinal curvature in a patient, and Mr. Thorpe said that it seemed to him fruitless to pursue this cross-examination. Dr. Macdonald did not accept these criticisms of his X ray photographs and he had his answers.

Lord DAWSON: May we take it that from the purely radiological and technical point of view the osteopathic lesions (œdema and fibrosis) we read of in this book are incapable of being shown?—WITNESS: Alongside the spine, yes.

In answer to Lord ELIBANK, witness said that he believed he understood what was meant by an osteopathic bony lesion. Dr. Macdonald had quoted Louisa Burns's definition of it as "a disturbance in the relation of bones, not associated with rupture of ligaments, and usually not of a degree beyond the possible normal relations of these under certain circumstances." A curvature of the spine, such as was shown in the radiograms submitted, was, as far as witness understood it, called an osteopathic bony lesion. An osteopathic vertebral lesion was apparently thought to be a lesion of the soft tissues and joints. Dr. Macdonald gave only 1½ pages in his book to the X ray evidence of this type of lesion, though he said that this was the most authoritative evidence on the lesion.

Viscount ESHER: Do you consider the radiogram scientifically fool-proof, and that it can be relied upon with absolute certainty?—WITNESS: Yes, the radiogram is fool-proof. But it is the interpretation that is the essential thing.

Viscount ESHER: We know that doctors often differ and make a different diagnosis from the same radiogram? —WITNESS: Not often. I am sure that there is no radiologist on the staff of any hospital in the country who would agree with what Dr. Macdonald has said.

Viscount ESHER: You think that your radiographic demonstration proves that there is nothing in the osteopathic theory?—WITNESS: I have nothing to do with theory. I am simply concerned with the facts as shown. What Dr. Macdonald has said with regard to œdema and fibrosis is entirely wrong.

Viscount ESHER: Is that sufficient to prove that there is nothing in the osteopathic theory?—WITNESS: That is for your lordships to judge. I cannot say that. I am simply speaking with regard to the X ray evidence.

In reply to questions by Viscount ELIBANK, the witness said that it was stated in the book referred to that the osteopathic bony lesion is a disturbance in the relation of bones. Ordinary curvature of the spine would fit into this definition although he would not himself describe it in that way. Medical men saw many cases of that sort every day.

Viscount ELIBANK: If you accept that, may it not be that the osteopathic method of treating these cases which you see every day is a better form of treatment than that given in the past by medical people?—If they cannot adduce any more scientific proof than they have done in these X ray photographs I cannot see much chance of that.

In reply to further questions, the witness said he had taken 1500 radiograms of cases of acute pneumonia in the past two years and had noticed nothing wrong with the spine in any case; nor had he ever seen any connexion between the upper cervical vertebræ and disease of the accessory nasal sinuses.

Sir Henry Dale's Evidence

Sir HENRY DALE, F.R.S., director of the National Institute for Medical Research, was next called to give evidence. Examined by Mr. RADCLIFFE, K.C., he stated that he was an F.R.C.P., a member of the General Medical Council, and secretary of the Royal Society. He had examined, as far as he could in the time available, the Research Bulletins submitted to the Committee, with particular reference to Bulletin No. 2, dealing with experiments of a physiological type. These Bulletins contained some papers which appeared to deal in no sense with the osteopathic theory.

COUNSEL: What are your conclusions as to the general work shown by the remainder? Do you think that the evidence they contain is the kind of evidence you would recommend for submission to such a society as the Royal Society for its consideration?—No. I should not take the responsibility of recommending it.

Or for publication in any scientific journal that you were responsible for?—I think if I were called upon to give an opinion as to the suitability for publication in any scientific journal of any of these contributions—except one which has no reference to osteopathy and which was properly published in the *American Journal of Physiology* —my opinion would inevitably be that they were not really scientific papers.

That is not because of any doctrine which they tend to support which you do not agree with?—The Witness: No. My prejudice, if I had any, would be in favour of a doctrine which ran contrary to received opinion. That is inevitable. If one is a scientific investigator, one spends one's life examining the basis of accepted views and hoping that one will be able to enlarge science by upsetting them and substituting sounder views on better evidence.

What would be your objections to recommending these papers as worthy of scientific consideration?—My difficulty would be that they do not seem to me to have the first qualification of really scientific investigation, which is to obtain new knowledge. They have the appearance to me of being experiments carried out in order to provide what might look like evidence for a theory already accepted. That in itself might be valuable as direct evidence in favour of a theory only supported hitherto by clinical observation. But it would be at that point, I think, that the real scientific investigation would begin—namely, to discover what was the manner of the suggested relation between particular spinal lesions and particular physiological effects. I find no evidence of any attempt to discover the manner of the relation. The object seems simply to find evidence that it exists.

Are you yourself an experienced research worker?—The Witness: I think that I have had a good experience of research. I have spent all my active life at it.

I suppose that it is necessary for that purpose to be experienced in the phenomena of experiments on animals? —For the particular kind of investigation with which I am concerned and for the reports with which Bulletin No. 2 deals, yes.

Do these workers show a sufficient knowledge of that in their paper?—I formed the impression that they do not.

Do they show the ability to distinguish what is important from what is unimportant in research?—I should say that they do not show that ability.

THE ALLEGED PRODUCTION OF GLYCOSURIA IN DOGS

The witness proceeded to comment on an experiment described in Bulletin No. 2, purporting to demonstrate the production of glycosuria in dogs by artificially created osteopathic spinal lesions. What struck him in the first instance, he said, was that the author of this paper described a number of things which, to the mind of an experienced research worker, appeared like glaring anomalies as though they were matters that could be accepted without comment. The investigator took 33 dogs for the experiment and he subjected them, quite properly, to a period of preliminary observation under the conditions of the experiment. They were caged and fed as they would be after the spinal lesions were created. It was not apparent that any effort had been made to choose the dogs with a view to their special suitability for the experiment. The investigator found that of these 33 animals 18 showed natural glycosuria to such an extent that he could not use them for the experiment. In other words, he appeared to discover in over 50 per cent. of normal dogs a degree of glyco-

suria of the same order as he expected to produce by the infliction of the spinal lesion on others, and he had to throw out 18 of them before he began.

The second point that struck him, said the witness, was that when the investigator selected his 15 animals—which showed at most what he called a trace of sugar in the urine—for the experiment and proceeded to inflict the spinal lesion and to produce degrees of glycosuria described by Dr. Macdonald in his summary as of various degrees up to as much as 5 per cent.—which was a very high degree—there was no evidence throughout the description that any of these dogs showed symptoms compatible with glycosuria of that degree. Some of them gained in weight. Their appetities were not a matter of comment, except that they remained good; they were not said to be excessive. There was no description of them showing any abnormal hunger or thirst; and, what was particularly striking, was that the volume of urine excreted by these dogs which had been rendered glycosuric by the spinal lesion was, in the majority of cases, smaller than that which they were excreting before the lesion was inflicted.

The witness said that he found it impossible to attach any scientific importance to all this. If the glycosuria described was a genuine phenomenon, then it was something quite new, and having no relation to diabetes in man, for example; and no attempt was made to explain it. It was apparently accepted; and although he did not think that the statement was directly made, the implication was that this was an experimental demonstration of the fact that a spinal lesion could produce glycosuria of the type which was important in human disease.

COUNSEL: Even if it could be shown that spinal manipulation reacted on remote parts of the body, would that of itself be of scientific importance?—I do not think that in itself it would be of scientific importance. I can imagine circumstances in which it might be interesting; but the investigation, the scientific work, would begin with the attempt to trace the nervous channels by which the spinal lesion produced the remote effect.

It is the "How?" and not the fact which is important?—Yes.

Is that an example of what you find throughout the Bulletin, and not an extreme case?—I think so. I have chosen it as what seemed to be an important example, and one on which I believe some reliance has been placed in previous evidence.

Witness said that he found no convincing evidence that would justify the attribution of particular diseases to particular osteopathic lesions, and repeated this in answer to questions with special reference to typhoid fever, diphtheria, epilepsy, and diabetes. The witness commented on another experiment referred to by Dr. Macdonald in his book (p. lxxxvii.). He described the deduction from the results of this experiment that the spinal lesion was a possible ætiological factor in splenomedullary leukæmia was not science—it was simply nonsense. In answer to further questions the witness said that he had found no evidence that pernicious anæmia or asthma could be attributed to particular spinal lesions.

Having studied the work shown in these Bulletins, do you think it is work of a kind which would justify the pecuniary support of the Medical Research Council?—I do not imagine that the Council would be inclined to make a grant in support of work of this kind if it knew this was going to be the kind of result. That is all I can say.

Sir Henry Dale Cross-examined

Mr. THORPE asked whether witness agreed with the opinion expressed by Sir Norman Walker, who had said that he would not mind a proper investigation into the theory and practice of osteopathy, and would go the length of welcoming it.

NO SCIENTIFIC JUSTIFICATION FOR FURTHER INQUIRY

The witness said Sir Norman Walker was concerned with the whole question of the science and practice of osteopathy while witness had been asked for evidence on what was represented as the scientific basis of osteopathy. If asked whether he thought it worth while to hold a public inquiry on the scientific merits of what had been tendered as a scientific basis, he would say that he did not think there was any scientific basis to inquire about. He had no views to express on the point of the practice of osteopathy.

COUNSEL: Sir Arthur Robinson stated that the proper action at present was to set on foot an organised and careful and scientific inquiry into the principles and practice of osteopathy. Would it be correct to assume that the best informed medical opinion is available to the Ministry of Health?

WITNESS: I should think so. The Ministry's statement is a statement as to what they regard as the proper action from the administrative point of view. On that matter I do not care to express any opinion in agreement or disagreement with the Ministry.

The witness said he had studied the Bulletins submitted by the promoters to the extent that time permitted. He could not claim to have read every word. They had been in his hands rather under a week. He had read No. 2 in extenso because it dealt with matters on which he thought his opinion was something of a specialist's opinion.

Are the ignorances or illogical conclusions obvious to a scientific man? Would a scientific man reading Bulletin No. 2 come to the conclusion that there was nothing in it—that it was all rather nonsense?—Speaking as an individual scientific man, that was certainly the impression it made on me. I would not go so far as to say that it was "all rather nonsense." A good deal of it is commonplace and unconvincing. But what appears to me to be nonsense is the implied suggestion that evidence of this kind has any bearing on the claim that the osteopathic lesion is either the determining or predisposing cause in the majority of human diseases.

There are at least five registered medical practitioners who believe in and practise osteopathy. There is no suggestion against their honesty or intelligence, and if they apply the test you apply to Bulletin No. 2, ought they to know at once that the whole thing is unscientific?—May I put it this way. I do not think any medical man who was not previously convinced of the essential truth of the osteopathic doctrine would be convinced of it by studying the evidence presented in Bulletin No. 2. If on other grounds, by practical clinical observation and general experience, he had somehow convinced himself that osteopathy was true, I think he would read Bulletin No. 2 with that in his mind, and he would get the impression that there were a number of statements there compatible with the truth of the doctrine.

Would it be unfair to suggest that a registered medical man who has spent his life in beliefs contrary to osteopathy would approach an investigation with prejudice—not conscious prejudice?—I do not know what a registered medical man would do. I am rather at a disadvantage. I have never been in practice. My life has been spent in research.

Witness said he had not heard a great deal about osteopathy. He had heard it mentioned from time to time in the last 30 years. His investigation into Bulletin No. 2 was the first research work he had considered it desirable to make into the theory of osteopathy.

Re-examined by Mr. RADCLIFFE, on behalf of the Royal Colleges, the witness said that he did not find at all convincing the evidence put forward in support of the theory that the osteopathic lesion caused abnormalities in the alimentary canal.

Lord ESHER asked if a period under a week was sufficient to make a complete examination of the theory of osteopathy. The witness said he thought he had sufficient time to cover the suggested scientific basis for the theory of osteopathy. To make a detailed and critical examination of the evidence put forward in those various Bulletins would take several months, but he should be sorry to spend several months on such a task, because the evidence consisted very largely of repetition of statements on supposed evidence which was entirely unconvincing.

Lord ESHER: You know about the immunity theory of the osteopaths. Their theory is that if your body is in a proper condition you will not be liable to get those diseases?—WITNESS: That is not only an osteopathic theory; it is a generally accepted medical theory.

The witness said he did not think any responsible medical research institute could undertake an investigation into the allegation that an osteopathic lesion altered the resistance of the body unless there was a reasonable body of prima facie evidence, and not merely evidence of the supposed effect but evidence as to the suggested mechanism. A statement that a cure was the result of the treatment involved an assumption. If the evidence in favour of the assumption justified examination it was worth investigation. But in the case of a new assumption with no apparent rational connexion with known facts of physiology it seemed to him that the onus of providing the evidence in favour of the assumption was on those who put forward the assumption. He suggested that no body of evidence had been produced in favour of the assumption in question to justify the expenditure of valuable time and money on medical investigation of its proof. Lord ELIBANK asked if the witness would have a share in nominating members on the committee of inquiry, assuming the Medical Research Council were asked to set up such a body. The witness replied that supposing the Medical Research Council were asked to set up such a body they might ask his advice.

Lord ELIBANK: If they asked your advice they would ask the advice of one who was prejudiced against osteopathy?—I am not prejudiced against osteopathy. I have started with a perfectly open mind, but with a prejudice as a scientific man in favour of finding something which goes contrary to current tradition. It would be a disappointment to me not to find any convincing evidence.

In the short time you have not found it worth while to investigate or examine the results of the practice of osteopathy?—That is outside the particular range of evidence which I have been invited to give to the Committee.

In reply to further questions, the witness said that he had not attempted to criticise the practical results of osteopathic treatment. He had been asked to express an opinion as to the scientific value of the evidence put forward. The examination of patients to be treated by osteopathy would be outside the range of his expert knowledge. He was not a practitioner of medicine.

Lord ELIBANK: In that event you do not disagree with Sir Norman Walker when he says he would be quite in favour of setting up a Royal Commission to investigate the whole principle of the theory and practice of osteopathy?—I have not expressed any disagreement with Sir Norman Walker on that point. I have only said if a Commission or Committee is to be set up I do not think the evidence tendered on the scientific basis of osteopathy would justify the expenditure of public money and so on, in an investigation of that alone.

You say that without any knowledge of the practice of osteopathy?—My statement is related simply to the experimental basis. I express no opinion as to the justification or otherwise of setting up a Royal Commission to investigate the practice of osteopathy.

This concluded the evidence of Sir Henry Dale.

Suggestions for Further Evidence

Mr. RADCLIFFE, addressing the Committee, said they had reached the position now when, as he understood it, the Bill was no longer being promoted. If it was merely withdrawn there would be no need for further evidence. But if the position was that some recommendation was still being asked for from the Committee in favour of an inquiry of some sort, or a Royal Commission, then he would have to ask their Lordships to hear relevant evidence.

The CHAIRMAN said the Committee had not considered the matter and they could not express any opinion at present. They would deal with the evidence brought before them.

Mr. RADCLIFFE suggested that the Committee would want to hear further evidence on the question as to whether or not it was proper that any public inquiry should be held.

Mr. THORPE said he thought his learned friend had misunderstood what he had said. The immediate question before their Lordships was their report to the House of Lords, whether the Preamble was proved or not. He was so bold as to ask that their Lordships might be kind enough to consider whether the evidence they had heard would justify them in making any recommendation. His learned friend now asked whether they would make any recommendation. The only issue before their Lordships was the Preamble. It so happened that the Ministry of Health and other witnesses had indicated a certain course. This was before their Lordships and he had asked them to consider it. His learned friend could not call evidence now as to whether the Committee should exercise their discretion in a particular way.

Sir W. JOWITT, on behalf of the British Medical Association, said that if a defendant's case was stopped halfway through by a court it must be and could only be on the assumption that he had won. If his victory was being qualified he had the plain right to call the whole of his evidence. If their Lordships were going to say they wanted to hear no more evidence they knew what that involved.

The CHAIRMAN said they had not stopped any evidence. Mr. Radcliffe had said that in view of Mr. Thorpe's statement he did not propose to call further evidence. The Committee had then decided for their own satisfaction, and for any decision they might come to, to hear two further witnesses.

Mr. RADCLIFFE said that he now understood the Bill could not be withdrawn except in the House of Lords. The Bill was thus before their Lordships and he could not close his case without calling his evidence. Mr. THORPE remarked that if their Lordships reported that the Bill should not proceed, then it was a mere formality.

Their Lordships having consulted in private,

The CHAIRMAN intimated that the Committee did not propose to alter the decision they arrived at in the morning. That concluded the hearing unless counsel wished to address the Committee.

Mr. RADCLIFFE said he was prepared to address the Committee on the Bill at large. If there was a possibility that their Lordships would report favourably on the Bill he must make his speech. Only an intimation from their Lordships that that would not be the case would make him refrain.

The CHAIRMAN: I thought you might draw that inference.

Mr. RADCLIFFE: Your Lordship having said that I think it would not be right for me to say more.

Arguments against Recommendation of Inquiry

Mr. RADCLIFFE added that the promoters of the Bill no longer wished that its provisions in any form should be reported on favourably by the Committee, if he understood the position. If that was the view put forward by the promoters he would ask their Lordships to accept the position and merely report in favour of the Bill not being proceeded with. Whether or not there were other steps that it might be right to take in order to establish the alleged position of osteopathy in this country was a matter which in their Lordships' position it would not be right to go into. It might be that the Minister of Health might think it right to institute or promote some inquiry of his own. That was a matter for his own discretion. He respectfully urged on their Lordships that they should not, in reporting in favour of the Bill not going forward, give any expression in favour of the view that the osteopaths had somehow made out a prima facie case in favour of having the practice and the theory of osteopathy inquired into by this public body. That issue had not been fully canvassed before the Committee, who had heard substantially only one side of the matter. He hoped the Committee would not say anything in their report that would seem to prejudge the case.

Mr. DICKENS, on behalf of the British Medical Association, said that the Association would not have closed their case in answer to the Bill had it not been arranged that the scientific witnesses who had not given evidence then were to be called by others. They had examined the evidence for the scientific value of osteopathy which had been put before the Committee by Dr. Macdonald and were prepared to speak as to its value. He accepted the decision of the Committee not to hear any more witnesses but he hoped they would bear these facts in mind.

Mr. THORPE said he wanted to dissociate himself from Mr. Radcliffe in the suggestion that if their Lordships favoured an inquiry that would mean that the osteopaths had made out a prima facie case. If their Lordships threw out the Bill and made no recommendation, it must follow from that that the osteopaths had proved no case. It would be most unfortunate if any decision of this Committee were to be advertised either as a victory for one part or the other. The matter had not been fully dealt with from a scientific point of view, and their Lordships would not think him disrespectful if he said that they were not the best people to deal with purely scientific questions. Any recommendation their Lordships might think fit to make would be in the public interest and would not reflect on either party or give either of them the right to say that they had won in a dispute.

The proceedings of the Committee then came to an end. A report will be submitted by the Committee to the House of Lords.

NOTES ON CURRENT TOPICS

The Budget: Income-tax Concessions

IN the House of Commons on Monday, April 15th, Mr. Chamberlain, Chancellor of the Exchequer, made his Budget statement. In the course of a review of the past year he said that industrial activity had increased by 12 per cent. and manufacturing output had established a new record. Exports were up by £30,000,000. The January registration of motor vehicles was 30 per cent. and the February retail trade 4·9 per cent. greater this year than in the same period of 1934. There had been no rise in the cost of living, and savings of the nation had increased. The true surplus of revenue over expenditure, other than that devoted to debt redemption, was £19,500,000.

The total estimated revenue for the coming year was £735,580,000, and the total estimated expenditure was £729,970,000, leaving a prospective surplus of £5,610,000, which was increased to £11,025,000 by an appropriation from the Road Fund, the yield on the heavy oil duties and minor items. Dealing with changes he proposed to make in his Budget, the right hon. gentleman said that the total taxation now borne by heavy oil vehicles doing moderate annual mileage was only one-half to two-thirds of that charged on corresponding petrol vehicles. The diversion to heavy oil vehicles was involving considerable loss to the revenue, and from August 1st next the differential licence duty imposed in 1933 on heavy oil vehicles would be removed and heavy oil used as fuel by road vehicles would be taxed at the same level as petrol, namely, 8*d*. per gallon.

Mr. Chamberlain explained that the proposals he proposed to make in regard to income-tax allowances involved a change of method for the reasons, among others, that a return to the pre–1931 position would involve withdrawal of the 1931 concession which increased the earned income allowance from one-sixth to one-fifth, and that last year's reduction in the standard rate of income-tax had benefited the larger, rather than the smaller taxpayers. This year the small taxpayer, especially where his income was near the bottom of the scale, was now to have his turn. Instead of the first £175 of taxable income being charged at half-rate (i.e., 2*s*. 3*d*. in the £), the first £135 would be charged at one-third rate (i.e., 1*s*. 6*d*.). Thereby, 2,250,000 (or 70 per cent.) of the taxpayers whose taxable income was below £135 would get relief of 9*d*. in the £—three times the relief which they got last year; and 200,000 whose taxable incomes were between £135 and £175 would get relief in diminishing degree as the taxable income rose to £175. For example, a married man with three children having an earned income of £500 would have his income-tax reduced by the new proposal from £13 10*s*. to £9. It was proposed to increase the personal allowance for married taxpayers from £150 to £170.

With regard to the children's allowances, the right hon. gentleman said that these at present stood at £50 for the first child and £40 for each subsequent child. He looked on the continued diminution of the birth-rate in this country with considerable apprehension. At the present time it might seem that we had here a larger population than we were able to support in England. At the same time, they knew the difficulty which the Dominions found in accommodating a larger population when they themselves were troubled with unemployment. He had a feeling that the time would not be far distant when that position would be reversed, when the countries of the British Empire would be crying out for more citizens of the right breed, and when we in this country would not be able to supply the demand. If, to-day, we could give even a little help to those who were carrying on the race, the money would not be wasted. He proposed to raise the allowance for each child after the first to £50, however many children there were.

The smallest earned income—in the hands of a single person—liable to tax was now £125. Such a person received a personal allowance of £100 and an allowance for earned income of £25, but if the income was derived from investment it would pay tax on £25. This had pressed rather hardly on small taxpayers owing to the Conversion scheme. In future it was proposed that the exemption limit should be fixed for all types of income up to £125, whether consisting wholly or in part of investment income, and to avoid a sudden jump in liability to tax payable on total incomes between £125 and £140 there would be an over-riding provision by which the tax should not exceed one-fifth of the excess over £125. The cost of the relief given by the above measures would amount in a full year to £10,000,000, and in the current year to £4,500,000. It was not possible this year to deal with the 10 per cent. surtax surcharge. The restoration which it was proposed to make of the remaining half of the 1931 cuts in salaries and wages as from July 1st next, would cost in a full year £5,500,000, and in the current year £4,000,000. The cost of all the reliefs in the current year was £10,525,000. To meet this there was a disposable surplus of £11,025,000, which, on a final balance of the Budget, left a prospective surplus for the year of £500,000.

HOUSE OF COMMONS

WEDNESDAY, APRIL 10TH

Medical Officers of Health Superannuation

Captain ELLISTON asked the Minister of Health whether he was prepared to bring pressure on those local authorities whose failure to adopt the recommendations of the Ask-with memorandum on salaries of whole-time public health medical officers meant denial of fair rates of superannuation to medical officers now approaching the age of retirement.—Sir HILTON YOUNG replied: No, Sir. I have no power to enforce these recommendations, but in those cases in which my approval is required to the appointment of a medical officer of health, it is my practice where necessary to call the special attention of the local authority to the recommendations.

In reply to a question put later by Sir ARNOLD WILSON, Mr. SHAKESPEARE stated that the Act had been put in force by 48 out of 63 county councils, 65 out of 83 county

borough councils, 134 out of 273 borough councils, 6 out of 29 metropolitan borough councils, 321 out of 739 urban district councils, 243 out of 592 rural district councils, 25 out of 7058 parish councils, and 179 miscellaneous authorities. Of the authorities which had not put the Act in force, two county councils, two county borough councils, and 21 metropolitan borough councils had local Act superannuation schemes.

Detention of Disease Carrier

Mr. GROVES asked the Minister of Health under what statutory authority a farm hand at Iver, Bucks, was compelled, under a magistrate's order, to enter hospital as an alleged disease carrier.—Sir HILTON YOUNG replied: I understand that the person referred to was removed to hospital under the powers conferred by Section 124 of the Public Health Act, 1875.

THURSDAY, APRIL 11TH

Knacker's Yard at Writtle, Essex

Sir VIVIAN HENDERSON asked the Minister of Health whether he was aware that the inhabitants of Writtle, Essex, were gravely concerned by a proposal to establish a knacker's yard, for the slaughter of tuberculous animals, within 400 yards of the village, and the decision of the rural district council to sell two acres of land for the purpose; and could the inhabitants be assured that he would not approve the sale without first giving the representatives of the parish an opportunity of personally pleading their case.—Mr. SHAKESEPARE, Parliamentary Secretary to the Ministry of Health, replied: The answer to both parts of the question is in the affirmative.

Uninhabitable Houses

Mr. HUTCHISON asked the Minister of Health how many houses in the country which had been acquired by local authorities for demolition purposes as uninhabitable were still undemolished and still contained tenants who were paying rents to the local authorities concerned.—Mr. SHAKESPEARE replied: It is regretted that this information is not available. My right hon. friend may, however, take this opportunity of saying that in cases which have been brought to his notice and investigated it has been found that it has been necessary for the local authority to expend any rents received by them in order to keep the property even temporarily in tolerable condition.

Milk (Special Designations) Order, 1923

Major MILLS asked the Minister of Health if he would as a temporary or permanent measure, authorise such rural and urban district councils within the administrative county of Southampton as applied to him to grant licences to sell Grade A milk under the Milk (Special Designations) Order, 1923, in order to avoid unequal treatment of milk producers who desired to qualify for the bonus under the accredited milk scheme, in view of the fact that the Hampshire county council did not at present exercise its powers under the above order and had no meeting at which it could decide to do so until May 13th, and that at present only a small proportion of the district councils in the county could grant these licences.—Mr. SHAKESPEARE replied: My right hon. friend is in communication with the County Council upon this matter, and pending their decision he does not think it desirable to authorise any further district councils to grant licences to producers of Grade A. milk.

Bacteriological Examination of Chinese Eggs

Mr. HASLAM asked the Minister of Health if he was conducting further bacteriological examinations into Chinese eggs not in shell as imported into this country, and if such inquiries included both disease producing micro-organisms and those causing putrefaction; and if he was prepared to publish the results in due course.—Mr. SHAKESPEARE replied: My right hon. friend proposes to have certain further examinations made; the investigations have been directed both to disease producing micro-organisms and also to other non-pathogenic organisms, among which putrefactive organisms are included. My right hon. friend does not at present see any need to publish the results, but he will be happy to furnish my hon friend with further details if he desires them.

Pasteurised Milk

Sir ARNOLD WILSON asked the Minister of Health whether he was aware that cream was frequently removed from milk before pasteurisation by large processing organisations and an equivalent amount of sterile fat added in the form of powdered milk; whether this practice was approved by his advisers; and, if so, whether he would arrange for a practical test over an extended period of the effect on children of this de-natured beverage as well as of milk.—Mr. SHAKESPEARE replied: The answer to the first two parts of the question is in the negative, and the third part does not therefore arise. I may perhaps remind my hon. friend that under the Milk and Dairies (Amendment) Act, 1922, the sale as milk of any liquid in the making of which dried milk has been used is prohibited.

Milk Supplied to School-children

Mr. R. J. RUSSELL asked the Minister of Agriculture what amount, if any, of the cost of the milk supplied to school-children was paid by the milk producer by deduction in arriving at the pool price, and what amount had been paid out of Government subsidy.—Mr. ELLIOT replied: In respect of the first 18,000,000 gallons consumed in the year ending Sept. 30th next, one-half of the loss incurred in supplying milk to school-children under the Milk in Schools Scheme is borne by the Exchequer under Section 11 of the Milk Act; the other half is borne, through the Milk Marketing Board, by the whole body of producers through the pool price for milk sales. Up to the end of February, 1935, 10,159,000 gallons had been consumed, and the total loss incurred by the sale of this gallonage at 1*s.* per gallon was £448,000, of which one-half is borne by the Milk Marketing Board. This figure, however, represents the actual cost of the scheme on the supposition that all the milk consumed by the children would otherwise have fetched the highest liquid price. In fact, but for the scheme some of the increased sales of milk to the children would have gone into low-price category manufacture for cheese and butter, realising with the Government grant under Sections 1, 2, and 3 of the Milk Act only 6*d.* a gallon. To this extent, therefore, sales of milk under the scheme have represented an increment to rather than a deduction from producers' returns.

Diphtheria at Leeds

Mr. GROVES asked the Minister of Health the cause of the heavy increase in cases of diphtheria and deaths from that disease recorded in Leeds during the year 1934, the mortality from diphtheria that year being the highest registered since 1913; whether his statistics showed if the increase in immunisation at Leeds had produced large numbers of carriers who had conveyed the disease to other children while not suffering themselves, or, alternatively, if there were any sanitary conditions in Leeds which accounted for the heavy increase in diphtheria.—Sir HILTON YOUNG replied: I am advised that the recent experience as regards diphtheria in Leeds accords with the general upward trend in the incidence of the disease which has recently affected all the large urban centres, especially those in the West Riding of Yorkshire. The answer to the second part of the question is in the negative.

MONDAY, APRIL 15TH

Telephone Facilities for Calling Doctors

Colonel HENEAGE asked the Postmaster General what response he had had to his advertisement calling attention to the opportunities for calling a doctor for a sick child when a telephone was installed.—Sir. KINGSLEY WOOD replied: I am sorry that it is impossible to distinguish, among the new orders for telephone service, which are now reaching the Post Office in large numbers, those which are attributable to a partfcular advertisement.

LONDON HOSPITAL.—Another £4000 is needed by the London Hospital for its new massage and electrical department which is to replace the present accommodation.

CORRESPONDENCE

THE NEED FOR MEDICAL PSYCHOLOGISTS

To the Editor of THE LANCET

SIR,—In his letter of April 8th Dr. Henry Harris makes a plea for the specialty of psychotherapy to be undertaken by men to be found in the asylum services. In the same number of THE LANCET there appears a review of "Psychology and Health" by H. Banister, Ph.D., and it is recorded that Dr. Banister is a practising psychotherapist to the Papworth Village Settlement. Dr. Banister, not a registered medical practitioner, has written a book which will attract the reader because of his command of language and the meticulous care of his construction. While the facts recorded are unlikely to find serious critics among qualified alienists, Dr. Harris is entitled to ask: "Why not go to the obvious source?"

As resident medical officer of Papworth perhaps I may be allowed to make a brief answer to this question. After defining the position of the physician as a psychologist, Dr. Banister devotes the first portion of his book to the development of the conception of a sentiment-formation tendency. So clear is the description of the integration of instinctive tendencies and emotions into sentiments and their further integration into character that one does not at first suspect the originality of the theory. This conception of the location of the origin of mental disability in the material object around which the sentiments are organised forms a working hypothesis of the greatest utility; and its importance is emphasised by the arresting statement made by Dr. James L. Halliday that 33 per cent. of persons referred to the regional examining centre at Glasgow were suffering from psychoneurosis.

To the insurance practitioner, weighed down by the information that the Minister views with concern the close correlation of the unemployment returns with the number of his certificates of incapacity, this consideration will indeed be a drop of oil on troubled waters. To the physician, charged with the re-establishment in industry of the partially disabled, it is of vital importance. Unemployment, from whatever cause, constitutes a disturbance of the object around which sentiments are normally organised. Dr. Banister's book and Dr. Halliday's report form an invitation to the alienist to leave his aisle for the ever-widening horizon of psychoneurosis.

I am, Sir, yours faithfully,

LEONARD STOTT.

Papworth Hall, Cambridge, April 12th.

To the Editor of THE LANCET

SIR,—This correspondence reveals a distressing lack of a sense of proportion. No one would be so foolish as to deny the need for more medical psychologists, but stumbling-blocks are put in the way. Thus Dr. Harris contends that "With regard to training surely there can be no doubt that the D.P.M. is merely a minimal requirement for *any doctor who is to be allowed to handle mental patients?*" (The italics are mine, but the question mark is Dr. Harris's.) If the letters M.C.O.G. replaced D.P.M. in the above sentence, and the word "obstetric" replaced "mental" Dr. Harris would have found that he had raised a hornet's nest about his ears. But because he is writing of psychotherapy no excitement is aroused.

The minimum requirement for medical practice is the possession of a medical qualification—not the possession of a variety of alphabetical appendages to one's name. Our foreign colleagues have recognised this fact and never fail to express surprise at the great variety of "sub-qualifications" available in this country. Incidentally, one would be interested to know how many of the "masters" under whom the budding psychotherapist is to sit possessed or possess a special diploma such as the D.P.M. Medical psychology is as fundamental to medicine as is physical examination. It is most emphatically not an enchanted forest reserved only for possessors of the D.P.M.

I would suggest that, in addition to a medical qualification and experience of the work, the medical psychologist needs, even more than other medical workers, a very wide range of intellectual interests. His motto must be *Nihil humanum alienum a me puto;* and his knowledge of normal psychology (and also of the philosophical problems germane to his subject) is much more valuable than experience of the major psychoses and of mental deficiency. There is no reason why any practitioner who has the time and the inclination for the work should not practise psychotherapy, for neither hypnosis nor analysis are sacerdotal mysteries requiring an initiatory ceremony.

Wide reading, far beyond the confines of medicine and medical psychology; thought; and the opportunity of treating the psychoneuroses are the essentials for the psychotherapist, whether he be the possessor of the D.P.M. or not. Last, but not least, he will do well to be a sound physician of the body as well as of the mind, for then he will be less likely to bring psychotherapy into disrepute by attempting psychological treatment of unsuitable cases. The medical psychologist is not mass-produced; he is inevitably trained individually and must be almost entirely home-made.—I am, Sir, yours faithfully,

A. PINEY.

Park-square West, London, N.W., April 12th.

To the Editor of THE LANCET

SIR,—I read Dr. Harris's letter regarding psychotherapy with interest. At a time when this question is much to the fore, and the establishment of psychotherapeutic clinics is being considered, attention should be drawn to the fact that the term psychotherapy covers a multitude of treatments—not to mention sins! To some, this type of treatment means an analysis of months or years; to others five minutes monthly, provided it occurs in a psychiatric clinic and not in general out-patients, is considered psychotherapy.

With such divergence of opinion, may I suggest that the time has come for research into psychotherapeutic methods, so ably stressed by Dr. Rees at the Royal Society of Medicine this week? It is obviously of extreme economic importance, in a crowded clinic, to determine (*a*) what patients are suitable for psychotherapy; (*b*) what is the minimum time for different types of disorders to be treated in. At present adherents of various schools express their opinions, but what is needed is an objective investigation on a large scale to compare the various treatments.

I note with some alarm that Dr. Harris demands that amongst their other virtues, psychotherapists should preferably be over 40. Yet some young patients occasionally express a preference for someone young to treat them. Truly, the lot of the psychotherapist is a hard one! Viewed with suspicion by his orthodox colleagues, he is told by the psychotherapists that qualifications count for nothing.

The analysts (often with reason) demand that he should be analysed, psychiatrists that he should hold the D.P.M.; by all that he should have the necessary character and flair; and now he has to be middle-aged as well. The one essential qualification left out by all of them is the possession of a private income.—I am, Sir, yours faithfully,

W. LINDESAY NEUSTATTER.

Wimpole-street, W., April 12th.

THE WIT OF HUGHLINGS JACKSON

To the Editor of THE LANCET

SIR,—I was fortunate in getting to know Dr. Hughlings Jackson when he was 53 and I was more than 20 years younger; and I was still more fortunate in being admitted to his friendship while I was still his house physician. During the years that followed I saw him frequently and experienced much kindness at his hands. When I first took a house, on the morning after entering on possession I was sitting alone after breakfast looking round somewhat disconsolately at the meagreness of my possessions; the bell rang, and Jackson walked in. He said he had just come to wish me luck and to see the house. It was the sort of kindness which he was always practising. The next day he came in and said that he had a sofa which he never used and he pointed out a place which he thought it might fill up, and he would be glad if I would take it away as it was really rather in his way. At the same time he brought me a case containing a dozen fish knives and forks which he wished me to have, but I was to say nothing about it, as they had been a wedding present, but he could not remember who had sent them. As he had another set, he explained that I would be really doing him a kindness if I relieved him of this one! Some years later, when I got married, he appeared as our first visitor on the morning after we returned from our honeymoon, just to wish both of us happiness and prosperity. Fortunately my marriage, instead of in any way interrupting our friendship, really cemented it, because my wife and he became just as intimate as he and I had always been, and this friendship continued until the very end, for in his last illness, when he scarcely saw anyone, he begged her to come, and always gave her a cordial welcome.

I have written elsewhere of his great consideration for others and gave as an example his particular consideration for my feelings on one occasion. A patient of his had died—a case of tabes dorsalis—and it was at the time when there was the great vogue for suspension treatment in that disease. This patient had suffered from a good deal of back pain. I went with Jackson to the mortuary where Dr. Walter Colman was making the examination, but, to my surprise, Jackson asked me to go to one of the distant wards to get some notes. I learnt afterwards from Colman that Jackson was afraid that some injury had been done to the back, and as I had carried out the suspension treatment, he feared that the examination might reveal this, so he sent me out of the way in order to spare my feelings. Fortunately, however, there was no evidence of the slightest injury, but I was naturally very much touched by such consideration.

Sir Andrew Clark used to say that there were two Yorkshiremen who had no sense of humour—Jonathan Hutchinson and Hughlings Jackson. I did not know Sir Jonathan intimately enough to be able to say whether this was or was not true of him. I knew Jackson so well that I can give the statement, so far as it concerns him, an emphatic contradiction. I think the following extract from his article on the Psychology of Joking will confirm this:—

"I think punning does not receive enough attention. In spite of Dr. Johnson's well-known dictum, we should not despise punning. Sydney Smith says that it is the foundation of all wit. Supposing three degrees of evolution, I submit that: (1) punning is the least evolved system of joking; (2) that wit is evolved out of punning; and (3) that humour is evolved out of wit. Everybody has heard of Sydney Smith's remark—that it requires a surgical operation to get a joke into the head of a Scotsman. But he spoke without distinguishing. The Scotch have a great appreciation of those highly evolved jocosities displaying the humorous, although, no doubt, a scorn of simple, lowly evolved jocosities, such as plays on words. It is difficult to form a conception of a Scotch punster; yet I have heard an Aberdonian, a physician of world-wide reputation, make a pun. Punning is well worthy of the psychologist's attention. I seriously mean that the analysis of puns is a simple way of beginning the methodical analysis of the process of normal and abnormal mentation. This, I think, I can easily show. We all have 'mental diplopia' when hearing the answer to a riddle which depends on a pun—'When is a little girl not a little girl?' Answer: 'When she is a little horse (hoarse).' The feeble amusement we have in the slightly morbid mental state thus induced is from the incongruous elements of a 'mental diplopia.' The word 'hoarse' rouses in us the idea of a well-known quadruped; at the same time we have the sensation of complete resemblance with the sense of vast difference. Here is, I submit, a caricature of the normal process of all mentation. The process of all thought is 'stereoscopic' or 'diplopic,' being the tracing of relations of resemblance and difference. To call punning a slightly morbid mental state may be taken as a small joke. But I do not think it very extravagant to describe it so; it certainly is not if it be a caricature of normal mentation. A miser has been defined as an amateur pauper; the habitual drunkard is certainly an amateur lunatic. And in the same style of speaking we may say that—well, we will say that punning is playing at being foolish; it is only morbid in that slender sense."

Jackson's teaching was very graphic because of his insight into medical problems, and the striking way he had of describing what his insight showed him. Thus, in an article on "Tumours of the Cerebellum," in which a reeling gait is too often present, his insight into the cause of the reeling is described in a most impressive way:

"Reeling is the earliest motor symptom. . . It is essentially a swaying of the trunk from back to front and from side to side. It is marked in some slight cases by the patient's walking with his legs apart: by this means small inclinations of the trunk are neutralised. The gait is worse when he walks with closed eyes. In early stages in slight reels, I believe the true fault is paresis of movements of the spine answering to the swaying of the trunk. The legs act erratically, but in an early stage they are blameless: they act erratically because they have to 'run after' the trunk to prop it up in its various over-inclinings. The legs, often blamed, are doing *more* than their duty."

Similarly, in regard to speech affection, his outlook was quite new.

"Swearing, for example," he said, "is not a part of language. It is a habit which has grown up from the impulse to add the force of passing emotions to the expression of ideas. It belongs to the same category as loudness of tone and violence of gesticulation. The distinction of these from language as an intellectual act may be best illustrated by the remark Dr. Johnson once made to a boisterous antagonist: 'Sir, you raise your voice when you should enforce your argument. . .' Curses have formed an element in all religious services: nowadays intentional cursing is obsolete: it has degenerated into meaningless swearing which, like cadence and gesticulation, is but a kind of commentary of the emotions on the propositions of the intellect. Vulgar people insert an oath at the proper intervals of their speech as a sort of

detonating comma, and thus they render forcible statements which might otherwise strike their hearers as commonplace."

A good many years ago I was accused, as a disciple of Jackson's, of overdoing my admiration for him and being almost too insistent in my support of some of his doubtful doctrines. I do not think this was quite true, although I must say that I always had grave misgivings when, as sometimes happened, I did not see eye to eye with him in regard to some of his views. Someone has said that no man is a hero to his valet; but this does not depend upon any failing on the part of the hero, but on the want of capacity in the valet to appreciate the high qualities of his master. The relationship of a disciple to a great teacher is quite different. He sees in his teacher great qualities of which he has at least some appreciation, and he recognises him as being on a much higher intellectual level than himself. It is, of course, a form of healthy hero-worship, and this was the attitude of myself and, I believe, of many of his other disciples to the great personality of Jackson. It will always be a pleasure to me to think that I had the privilege of being on terms of reverent and at the same time affectionate intimacy with a man of such outstanding genius.

I am, Sir, yours faithfully,

April 8th. JAMES TAYLOR.

*** Dr. James Taylor, editor of the "Selected Writings of John Hughlings Jackson" and of his "Neurological Fragments," wrote in the latter publication an admirable biographical memoir. He was thus able at the recent Jackson memorial dinner to record many intimate details of his personality, and what he sets out above will be read with pleasure at the present juncture.—ED. L.

ASPHYXIA NEONATORUM: ITS TREATMENT BY TRACHEAL INTUBATION

To the Editor of THE LANCET

SIR,—The procedure described by Mr. Blaikley and Mr. Gibberd in your issue of March 30th, p. 736, promises to be of great practical value in the treatment of asphyxia in the new-born. Their method for dilatation of the solid lung with oxygen-carbon-dioxide gas mixture closely imitates what normally occurs shortly after birth, when the infant must somehow, and by some physiological action, bring about a phenomenally high air pressure in the smaller bronchi—far beyond that which obtains after the lung has once been dilated.

Now, what is this highly important physiological action to which every normally born infant owes its life? In considering this problem I wrote in 1903[1]:

. . . "in children, the bronchioles dilate and contract rhythmically with inspiration and expiration. . . . At birth, before respiration has occurred, the lungs are solid and in an atelectatic condition, and at the first breath, the air inspired has to overcome the adhesion of the surface of the bronchial mucosa and of the alveolar epithelium: It is only after some time has elapsed that the lung is fully expanded and the pulmonary expansion, which occurs in spite of the tendency of the lungs to contract, is probably aided by the bronchial contraction during expiration, otherwise the chest would tend to remain collapsed if the air passed out of the bronchial tubes just as readily as it passed in."

A baby with each inspiration dilates the vocal cords and the bronchioles; with each expiration the vocal cords approximate and the bronchioles contract, so that the air is inspired more freely than it is expired, as its exit is slightly impeded, and so expiration is more prolonged than the corresponding inspiration. With forced respiration efforts the glottis and bronchioles are more dilated on inspiration and more contracted on expiration, and hence the inspired breath more definitely locked in; much as in paroxysmal asthma, when the expiration may be so prolonged that the next inspiration has to be made before the expiration is complete, and consequently the lungs become more and more distended, with the air pressure in the bronchioles and alveoli abnormally high. But it is by a precisely similar process of locking-in of the inspired air and increasing partial air pressure that the new-born infant gets the solid lung dilated up. Now, this work of Mr. Blaikley and Mr. Gibberd goes to show that a pressure of at least 20 cm. of water must be attained in the smaller bronchioles to effect this dilatation of the atelectatic lung of the new-born by artificial means; hence the futility of forcible inflation by the oxygen-gas mixture under a pressure of no more than 15 cm. —enough in after-life but wholly inefficient to expand the lung in asphyxia neonatorum. Indeed, they found that the air forced into the trachea should have a pressure of 30 cm. Surely no inspiratory effort of the infant could possibly bring about anywhere near such a high negative pressure?

It seems that the forcible respiratory efforts, with the consequent bronchiolar contractions and dilatations, are essential factors in bringing about such a degree of dilating pressure in the bronchioles. If that is true, one must realise that in such conditions the usual methods of artificial respiration are certain to fail.

A further point of interest lies in the fact that in using the authors' method "the movements of respiration are not necessary for the process of lung ventilation, which can be adequately maintained in the complete absence of respiratory movements." Quite so, for their procedure reproduces what normally occurs in the alveoli. The air pressure during normal inspiration and expiration is almost static; just as in the capillaries the circulating blood is little affected by attending cardiac systole or diastole. Differing air pressure in the alveoli and minutest bronchioles would influence the *rate* of gas exchange; hence under the forced air pressure, the baby will quickly develop a respiration-rate so rapid that it is impossible to follow it by alternating pressure in the bag; moreover, it would anyhow be futile to attempt this, for the maximum effect of quickened oxygenation has been obtained by the artificially high air pressure in the alveoli.

I am, Sir, yours faithfully,

Bristol, April 12th. PATRICK WATSON-WILLIAMS.

[1] Bristol Med.-Chir. Jour., March, 1903.

TREATMENT OF LOBAR PNEUMONIA

To the Editor of THE LANCET

SIR,—Even with the assistance of Felton's serum, as recommended by Dr. Davies and his colleagues in your issue of April 6th, it must be almost impossible for a pneumonia patient to recover without a full complement of sleep. Writing in the *Edinburgh Medical Journal* many years ago, a physician, whose name I have forgotten, claimed that chloral hydrate was almost a specific for acute lobar pneumonia and, in his experience, cut short the disease. He combined it with digitalis. Here, then, was a potent remedy which had the charm of producing sleep. I put it into practice forthwith, and was frankly surprised at the results obtained; cases which had seemed hopeless from the first recovered. My practice was

to give 20 grains of pure chloral hydrate and half an ounce of the fresh infusion of digitalis at 9 P.M. on the first day of the illness, giving another grs. 10 an hour later if the patient were awake.

The next and following days the patient had chloral grs. 20, with the digitalis night and morning if necessary, and no other medicine; for nourishment 8 oz. of milk and half an ounce of brandy every two hours if he were awake. As a matter of fact, these patients seldom sleep more than two hours on a stretch, but the sum total during 24 hours is often 10 to 12 hours, with comfortable drowsiness between. If sleep should be prolonged beyond four hours they should be roused for nourishment, but never to take the temperature. On no consideration whatever should an alkali be given with chloral hydrate.

I am, Sir, yours faithfully,

April 11th. T. PAGAN LOWE.

SIR JOHN ROSE BRADFORD

To the Editor of THE LANCET

SIR,—In an age when octogenarians are plentiful, and even nonagenarians by no means rare, the passing of Rose Bradford will, to his many pupils and friends—the terms are synonymous—seem grievously premature. Memory takes one back to 1889 when he won the Gold Medal at the London M.D. Exam., an honour which, for several years thereabouts, was "farmed" by U.C.H. Bradford inherited the teaching of a gifted band—Jenner, Quain, Bastian, Ringer, "Freddy" Roberts, and, by no means least, Vivian Poore, a master both of clinical medicine and of epigram.

References have been made to Bradford's remarkable memory. I have often heard Bradford himself speak of this gift as a striking quality of Poore's genius, who, years after the event, would remind his listeners of the clinical features of a particular case in a particular bed in Ward IX of the old U.C.H.

Of Bradford's early triumphs in physiology, and his almost precocious capture of the F.R.S., others better qualified have spoken. We remember him as the quiet helper and steadfast friend, and a personal instance will serve as an illustration. I had not seen him for nearly ten years when I unexpectedly met him in France in 1918. In the uniform of a major-general, and wearing the ribbons of the K.C.M.G. and C.B., his spare, slightly stooping figure contrasted somewhat strangely with those to which one had become accustomed during four years of war. And, in a moment it was Bradford and no other. In the same quiet voice he expressed the same measured concern for what I was doing, and asked how things were going with me. It was as if we had parted but the week before—so unfailing was his memory, so unswerving his sympathy.

And U.C.S., U.C.L., and U.C.H. will for many generations bear the imprint of the character and example of the most distinguished and lovable personality who has ever crossed the threshold of all three.

I am, Sir, yours faithfully,

Bury St. Edmunds, April 13th. ERNEST STORK.

PANEL AND CONTRACT PRACTICE

Sickness in a Large Industrial Group

AT the annual meeting of the National Federation of Employees' Approved Societies a claim was made by the president, Mr. Henry Lesser, that the sickness statistics compiled each year by the Federation are unique in this country for the picture they give of occupational sickness. Details for 1934 are not yet available, but he was able to give the benefit per member as 11·21 days for men and 10·35 days for women, being a slight improvement in the one case and a slight setback in the other. The number of claims paid in 1934 was, however, lower than in 1933, both for men and women. Expenditure on influenza was notably less in 1934 than in 1933, but in almost every other group of diseases there were small increases. Incapacity among men from nervous diseases had, he said, increased steadily from 0·99 days per member in 1929 to 1·59 days per member in 1934; in women, on the other hand, the amount of illness from this cause had remained stationary. Reviewing the sickness experience of the last six years he found no indication of any lowering of the general standard of health among the members; the rate of sickness remained slightly below that of 1929. This encouraging result might, Mr. Lesser remarked, be attributed "to some extent at least" to improved medical service provided under the National Health Insurance Acts.

A Costly Omission

Clause 9 (12) of the terms of service requires an insurance practitioner to keep and furnish records of the diseases of his patients and of his treatment of them in such form as the Minister may determine. Some practitioners appear still to be under a misapprehension as to the meaning of the words "to keep." Reference to the context will show that the requirement is to keep the record in the sense of compiling it, and the requirement to furnish is equally insistent. A practitioner in the North of England is likely to have this fact brought rather sharply to his notice if the recommendation of the local insurance committee is adopted by the Minister of Health. On two previous occasions this practitioner had been fined owing to his failure to transmit forms of medical record on demand. Between June 22nd and Dec. 10th, 1934, repeated applications were made to him without avail for the return to the committee of the medical records of 42 insured persons removed from his list, and between Dec. 10th, when the matter was referred to the medical service subcommittee for investigation, and Jan. 24th, 1935, further application had been made without avail for the return of 49 more records. The practitioner admitted his omission to return them, giving as the reason for his failure to do so that he had been ill and had from time to time employed a locum tenens to help him in his practice, but preferred to attend to the clerical side of his work himself. Notwithstanding his undertaking to return the records within a week or so, and his statement that he realised the serious nature of his omission, the insurance committee decided to make representations to the Minister that, owing to his repeated failure to comply with the terms of service, the conditions on which the money for defraying the cost of medical benefit is payable to the committee had not been fulfilled and that the sum of £75 should be withheld, such sum to be recovered by deduction from his own remuneration. This appears to be a case where it would have been cheaper for the practitioner to have obtained clerical assistance.

Personal Attendance Overdone?

A London practitioner has incurred trouble for himself by an endeavour to do his best for the patient instead of handing over his responsibility to a hospital.

The patient was seen by this practitioner and his partner alternately twice in October and twice early in November. On the occasion of the first consultation he complained of sore-throat and cough; his chest was examined and his heart was found to be in a weak state; the cough was considered to be due to pharyngitis. On Nov. 6th the man attended the surgery and was seen by the partner who, on examination, found him suffering from palpitation and shortness of breath on exertion, bruit of mitral disease with dilatation of the right side of the heart, moist râles all over the chest, temperature normal, sputum greyish, and œdema of feet. The partner diagnosed heart failure and advised bed, pointing out the vital importance of rest. Visits were made to the patient four times up to Nov. 27th, and on the 29th idem he attended at the surgery and was instructed to return to bed. Further visits were paid on Dec. 3rd, 6th, and 10th, on the last of which dates, after an interview with the patient's brother, the partner arranged for the removal of the patient to a local hospital. After admission raised evening temperatures suggested the desirability of X ray and sputum tests; the former indicated a tuberculous condition of the lung and the latter the scanty presence of tubercle bacilli. The patient died in hospital on Jan. 13th. His brother, who made a complaint to the insurance committee, did not allege neglect against either the practitioner or his partner in so far as their treatment of the patient was concerned; but he thought that if the existence of tuberculosis had been diagnosed earlier life might have been prolonged. He suggested that the partner was negligent in not having arranged earlier for admission to hospital, and referred to the fact that other residents in the house where his brother lodged were not aware of the necessity for precautionary measures against infection.

In his evidence to the medical service subcommittee the practitioner stated that symptoms associated with mitral stenosis, from which the insured person was suffering, would produce exactly the symptoms found. There were no symptoms, such as night sweats, indicative of the existence of tuberculosis, and having regard to the diseased condition of his heart the cough was regarded as due to that condition. The insured person seems to a large extent to have disregarded the advice to have complete rest in bed, inasmuch as on every occasion on which he was visited he was found out of bed. The committee expressed themselves satisfied that both the practitioner and his partner gave proper and sufficient attention to the case and that they were in no way negligent in not arranging earlier for the admission of the patient to hospital. On the contrary, the fact that the partner continued to treat the insured person in respect of his very serious heart condition, rather than absolve himself of responsibility by sending the patient to hospital, suggested that he was taking a genuine interest in the case.

SOCIETY FOR PROVISION OF BIRTH CONTROL CLINICS. A lecture on the theory and practice of contraception will be given to medical practitioners and students by Dr. Gladys Cox on Friday, May 3rd, at the Walworth Women's Welfare Centre, at 6 P.M. At the centre demonstrations will be given at 6 P.M. and at 7 P.M. on Friday, May 10th, and at the same hours on Friday, May 17th. The fee for the lectures and demonstrations at the centre is 5*s*.; they are open to medical practitioners and students who have completed their gynæcological course, and those wishing to be present are asked to signify at which of the alternative hours they wish to attend.

MEDICINE AND THE LAW

Damages for Dead Person's Sufferings

UNACCUSTOMED consequences are flowing from the new legal rule that a living person may obtain damages for pain and suffering negligently inflicted on a dead person. It remains to be seen how far the rule will go in the field of professional negligence. Meanwhile, it is having its natural application in connexion with traffic injuries, as is illustrated by the case of Rose *v.* Ford recently decided at Birmingham assizes. A woman was injured by a careless motorist; her leg had to be amputated and, four days after the accident, she died. Her father sued the motorist for damages. Before 1934 there was a legal maxim that personal actions died with the person concerned; the judges had evolved the rule that in a civil court the death of a human being could not be complained of as an injury. To this rule an exception was made by the Fatal Accidents Act, sometimes called Lord Campbell's Act, in 1846. Under this statute it became possible for a wife, husband, parent, or child to bring an action for damages where death had been caused by wrongful act, neglect, or default. In the Birmingham case the father obtained £300 damages under this Act as he could have done before 1934. But he also obtained £500 damages under the new law. Had his daughter lived, she would have been entitled to damages for the pain and suffering caused by the motorist's negligence and for the loss of her leg. The Law Reform (Miscellaneous Provisions) Act of last year introduced the general principle (subject to certain exceptions and limitations) that on death all causes of action on which the dead person might have sued are henceforth to survive for the benefit of the dead person's estate. Thus the father could obtain the £500 for the four days of pain and suffering endured by his dead daughter and for the loss of her leg. Counsel for the defendant motorist sought to resist the claim or to diminish the damages by an argument which was really an attack upon the new law. Suppose, he said, a man has left all his property to the British Museum and is run over and injured by a motorist and dies of his injuries a week later; would it not be absurd that an institution like the British Museum should be entitled to stand in the dead man's shoes and to recover damages for personal injuries and suffering which an impersonal body cannot feel? The argument, however, met with no success.

In one respect the plaintiff failed in the Birmingham case. The father had claimed damages not only for his daughter's sufferings and the amputation, but also for the shortening of her expectation of life. Under this last heading Mr. Justice Humphreys declined to allow the father any damages because there was, he said, no evidence that she suffered mentally on account of that shortened expectation. Not long ago the Court of Appeal confirmed a judgment by Mr. Justice Acton (Flint *v.* Lovell) awarding £4000 for shortened expectation of life to a man of 70 who, by injury in a motoring accident, had lost the prospect of an "enjoyable, vigorous, and happy old age," and was now, according to the medical evidence, not likely to live for another year. If a living person can thus obtain damages for shortened expectation of life, will not a similar course of action survive to the estate of a dead person? It is worth noting that Sir Frederick Pollock, a high authority, has lately criticised the Court of Appeal for its attitude in Flint *v.* Lovell. The veteran jurist has no objection to the calculation of shortened expectation by

reference to a sufficiently large average; the basis, as he says, is familiar enough in contracts of life insurance. But he doubts if it is possible for any human tribunal to attach any definite meaning to the supposed detriment of the shortening of life—"or, for that matter, to say whether death, when it happens, is itself a bad or a good thing." There must always be a danger, as Lord Justice Roche hinted in Flint *v.* Lovell, that to make the shortened expectation of life a distinct head of damages is to compensate the plaintiff twice over for what is really the same detriment. To return, in conclusion, to the imaginary case of the man who has left his property to the British Museum, it would certainly seem anomalous if the Museum should get damages for the accident which shortened his expectation of life when it is thereby receiving his property all the earlier.

Doctor's Delay in Report to Police

At a recent inquest at Camberwell the coroner commented on a doctor's duty to give prompt information to the police after having been called in to attend to someone found shot. The inquest was upon the death of Mrs. Edwards, aged 72, whose husband, Harry Hans Edwards, aged 80, is now remanded on a charge of having murdered her. There was evidence that the deceased was addicted to alcohol and came home one night the worse for liquor. Next morning about 6.30 a daughter heard a scream and, going to her parents' bedroom, found her mother lying across the bed and her father standing near. A doctor was summoned. He found that Mrs. Edwards had two wounds in the chest; Mr. Edwards had a revolver which the doctor persuaded him to hand over. The doctor went home and saw some patients who had called; he did not tell the police till after 10 A.M. and the police did not visit the Edwards's house till 10.50. The coroner pointed out the importance to the police of being able to examine the exact position and surroundings of the body at the earliest possible moment. He reminded the doctor of his duty to communicate with the police promptly, though he said the omission on this occasion had not greatly mattered. Coroners and police are naturally preoccupied with the dead; medical practitioners can hardly be blamed if they attend to the living. Nobody but the medical practitioner is in a position to assess the relative claims.

OBITUARY

JOHN ATHELSTAN BRAXTON HICKS, M.D. Lond., D.P.H. Camb.

WE announced last week the death on April 7th from pneumonia of Dr. John Braxton Hicks, pathologist in charge of the L.C.C. group laboratory at Lambeth.

John Athelstan Braxton Hicks was born in London the son of Mr. Athelstan Braxton Hicks, was educated at Epsom College, and received his medical training at Westminster Hospital. He graduated at the University of London as M.B., B.S. in 1907, obtaining honours in pathology, and proceeded to the M.D. degree three years later. In the same year, 1910, he took the D.P.H. at Cambridge, and was appointed pathologist to the Seamen's Hospital, Greenwich.

His work there justified the invitation to return to the Westminster Hospital, and he served the institution zealously in many capacities. He was assistant pathologist and curator of the museum for a period, was resident obstetric physician, and in 1917 was in general charge of the venereal cases. He was lecturer in the medical school on morbid histology and pathology, and he also compiled a card catalogue for the museum based on the one previously made by the late Charles Stonham. For two years, 1911–12, he was pathologist at Queen Charlotte's Lying-in Hospital. In 1913 he took the diploma of M.R.C.P. Lond., and arising out of his various opportunities for pathological observation, made many communications of clinical value to medical literature, including papers published in the *Proceedings* of the Royal Society of Medicine, the *British Medical Journal*, and *The Lancet*. He was appointed reader and associate examiner in pathology at the University of London, and at the time of his death was pathologist in charge of the group laboratory, L.C.C., at Lambeth Hospital.

Braxton Hicks was a pathologist of high standing, and his work was especially marked by the endeavour to make his findings of clinical value. We have received from his colleagues at Lambeth Hospital the following estimate of the man and his services to medicine: "The news of Dr. Braxton Hicks's death came as a grievous shock to his colleagues at Lambeth Hospital, where he was immensely popular with medical and nursing staff alike. He was recognised for what he was, a real 'character.' To his pathological work he brought wide experience, keen interest, and great thoroughness, and his reports, especially in an uncommon or difficult case, were sure to be full, detailed, and enlightening. He was a keen and well-qualified clinician and few things delighted him more, when in the wards collecting pathological specimens, than to be asked his clinical opinion of a case. His view, modestly though expressed, was seldom wide of the mark. In his laboratory he took refuge behind a brusqueness of manner which quite failed to hide from the discerning his innate generosity, for, however busy he was, his help was never asked in vain. He was sensitive and not one with whom it was wise to take liberties, but few could deliver so efficient a rebuke with so little rancour. He little guessed how much his 'billets doux' of good-humoured 'strafe' were prized by their recipients. He will long be remembered as a first-rate pathologist, a loyal colleague, and a most lovable personality."

Dr. Arthur Davies writes: "As a fellow student of John Braxton Hicks, may I be allowed to pay tribute to him. Coming to Westminster from Epsom with a high reputation for scholarship, he quickly impressed his contemporaries with the quality of his industry and ability. He showed himself to be worthy of his distinguished forbears in obstetrics and in forensic medicine, and gave early promise of eminence in pathology, gaining honours in the University of London M.B. examination. There was no doubt in our minds that he was a man of outstanding merit, and that a career of unusual distinction lay before him. This was confirmed by the success he subsequently achieved. Winning his spurs as pathologist to the Seamen's Hospital, he was invited to return to Westminster as assistant to our revered chief, Richard Grainger Hebb. The energy and loyalty with which he served our 'Master' still further endeared him to Westminster men. Later he succeeded to the directorship of the laboratory and continued to devote himself with the greatest assiduity to the work that devolved on him during a period of great development in the scope of investigation and research, and for which he was so well endowed. The qualities

that distinguished him as a student remained remarkably constant, and to few is it granted to maintain such a standard of high endeavour. His fellow students will continue to remember and revere a loyal brother, and a distinguished son of their medical school."

GILBERT BERTRAM WARBURTON, Ch.M. Manch., F.R.C.S. Eng.

THE death is announced on March 25th of Mr. G. B. Warburton, who recently retired from his position of senior surgeon at the Royal Manchester Children's Hospital on account of continued ill-health. He received his education at the University of Manchester, and graduated M.B., Ch.B. Manch. in 1907. He was house surgeon to the Manchester Royal Infirmary, and in 1912 took the diploma of F.R.C.S. Eng., and in the following year proceeded to the degree of Ch.M. In due time he was appointed assistant surgical officer in the out-patients' department of the Infirmary, and resident surgical officer, and later, as surgeon to the Royal Infirmary, became surgical tutor in the medical school.

At the outbreak of war Warburton was resident surgical officer at the Infirmary, and in 1917 joined the R.A.M.C. and served in Egypt until the end of hostilities. He attained the rank of major, and was appointed surgical specialist in the 76th Casualty Clearing Station of the Egyptian Expeditionary Force and was more than once mentioned in dispatches. On his return to civil life he was appointed surgeon to the Royal Manchester Children's Hospital, and he worked in connexion with this institution until his health broke down last year. Through his experiences at the hospital he became deeply interested in hare-lip and cleft-palate surgery, while he also did valuable work as visiting surgeon to the Bethesda Home for crippled children, and as consulting surgeon to the Manchester and Salford Society in aid of crippled children. Since 1922 he had been visiting surgeon to the Withington Hospital and took an active part in the development of this hospital, which has proceeded rapidly since the transfer of the institution to the control of the Manchester City Council.

Mr. Warburton's widow only survived him by a few days, and he leaves three sons.

MEDICAL NEWS

Royal College of Physicians of London

At a meeting of the College held on April 15th, Lord Dawson of Penn was re-elected president. Dr. O. F. F. Leyton and Dr. F. M. R. Walshe were appointed Examiners to the Conjoint Board in medicine and ophthalmic medicine respectively.—Lord Horder was appointed a representative of the College on the National Council for the Disposition of the Dead, Surgeon Vice-Admiral Sir Reginald Bond, M.B., a representative of the College on the Professional Classes Aid Council, and Dr. T. W. Wadsworth a delegate to the twenty-first annual conference of the National Association for the Prevention of Tuberculosis to be held at Southport, June 27th–29th, 1935.

Diplomas in Ophthalmic Medicine and Surgery were granted, jointly with the Royal College of Surgeons, to the following candidates :—

Harbans Lal Anand, Edmund Johnston Baldwin, Godfrey Dacre Jennings Ball, Allan Henry Briggs, Rochiram Udhandas Hingorani, Vincie Vernon Hilton Hoakai, Alice Bowen Laker, Thomas Boyd Law, Lionel Arthur Lewis, Frederick Maxwell Lyons, Abraham Mellick, Jainti Dass Saggar, Lajpat Rai Sarin, Captain Peter Shannon, I.M.S., and Edward Wolstein.

University of London

At recent examinations the following candidates were successful :—

D. P. H.

Part I.—V. F. Anderson, Lalage R. A. Benham, J. H. Blakelock, Edith J. R. Browne, Hilda L. Byett, H. S. Davies, C. M. Dighe, David Erskine, W. G. Evans, Mohomed Farooq, O. M. Francis, H. A. Gilkes, J. V. Hurford, J. T. R. Lewis, Edyth L. Morris, Vaithianather Nada Rajah, R. M. M. C. Orpwood, L. M. Ram, C. J. Sanderson, Hubert Smith, Thomas Standring, E. W. Taylor, V. T. Vagh, J. D. V. Wijeyaratne, W. W. Wildman, and R. A. Wilson.

British Dental Association : New Headquarters

The new headquarters of the British Dental Association at 13, Hill-street, Berkeley-square, were formally opened by Mr. Geoffrey Shakespeare, M.P., parliamentary secretary to the Ministry of Health, on April 12th, in the absence of the Minister of Health, through illness. Mr. W. Graham Campbell, who presided, was supported by Mr. G. Northcroft, chairman of the representative board, Mr. Bryan Wood, chairman of council, Mr. Walter Wood, treasurer, Sir Norman Bennett, Mr. E. Hackforth, of the Ministry of Health, Mr. W. G. Senior, dental secretary, and members of the representative board. Mr. Campbell, in asking Mr. Shakespeare to open the building, said that the Association had moved from lodgings in Hanover-square to a house in Bloomsbury, and thence to a mansion in Mayfair. It had outgrown the quarters at Russell-square which had seen so many activities since 1920, and further accommodation was urgently needed for its increasing responsibilities. They owed much to Mr. F. J. Pearce, chairman of the housing committee, for his search for new quarters and his supervision of the alterations to the new building. Mr. Shakespeare said they were fully cognisant at the Ministry of Health of the valuable work which public dentistry played in the health of the community and the responsible part which the British Dental Association took in its organisation. He had recently been reading the history of dentistry which Mrs. Lindsay, the librarian, had written, and had been greatly interested in its developments. He paid a tribute to the importance of the school dental service and referred to the pioneer work in that field of W. M. Fisher, of Dundee. Sir Norman Bennett then asked Mr. Shakespeare to open formally the Robert Lindsay Library. When, he said, the British Dental Association moved to Russell-square in 1920 Mr. Lindsay was appointed its first dental secretary. He was a man of great energy and played a conspicuous part in the passing of the Dentists Act of 1921, and the subsequent developments of public dental service as an additional benefit under the Health Insurance Acts. He devoted his life to the Association and it was fitting that his name should be commemorated in the library of which his wife was now curator.

Royal Naval Medical Club

The annual dinner of this club will be held at the Trocadero Restaurant, W., on Friday, April 26th, at 8 P.M. The general meeting will be at 7.30 P.M. The hon. secretary may be addressed at the Medical Department, Admiralty, London, S.W. 1.

St. Mary's Hospital Institute of Pathology

A course on pathological research in its relation to medicine is to be held during the summer session at the institute of pathology and research at St. Mary's Hospital, London, and opens on May 2nd with a lecture on the determination of the true from the false in medicine and elsewhere, by Sir Almroth Wright, F.R.S., principal of the institute. The next lecture will be delivered on May 9th by Prof. E. D. Adrian, F.R.S., on the electrical activity of the brain, and on May 16th Dr. Igor N. Asheshov, formerly director of the bacteriophage laboratory at Patna, will speak on bacteriophage. On May 23rd the lecturer will be Dr. C. H. Andrewes (the cancer problem : some fresh clues); on May 30th Dr. R. G. Canti (cinematograph demonstration of the cultivation of living tissue); on June 6th, Sir Henry Dale, F.R.S. (the active substances in ergot); and on June 13th Dr. J. Henderson Smith (virus disease in plants). The lecturer and subject for June 20th will be announced later. The lectures are open, without fee, to members of the medical profession and students of the medical schools, and will take place at 5 P.M.

Chesterfield Royal Hospital

Mr. G. A. Eastwood, a former Mayor of Chesterfield, has left £10,000 to this hospital for building new medical wards.

British Health Resorts Association: Conference at Buxton

The corporation of Buxton will open on Friday, April 26th, a new clinic for the use of persons of moderate means who are suffering from various forms of rheumatic disease. Lord Horder will perform the opening ceremony, and the Association has been invited to hold a conference the next day. The discussion will be on the spa treatment of crippling conditions in children and adults, and will be opened by Dr. R. G. Gordon, of Bath, speaking from the physiological point of view, followed by Dr. A. H. Douthwaite and Mr. A. G. Timbrell Fisher. At the Devonshire Hospital there will be a demonstration of the various methods employed; the use of pools, manipulation baths, douches, whirlpools, &c., in orthopædic treatment. There will also be a discussion opened by Sir Landon Ronald on the place of amusement in the health resort; Mr. St. John Ervine and Mr. L. du Garde Peach also speaking.

West Sussex Contributory Fund

At the annual meeting of the West Sussex Associated Hospitals Contributory Fund, reference was made to the claims of married members for the nursing association rebate, but for which the fund would be unable to pay another 1*s.* a day on in-patients to the associated hospitals. The rebate was claimed last year by no fewer than 4332 married couples, bringing about a loss to the fund of £936. The report submitted to the meeting showed a membership of 22,000. Associated hospitals received £4974 for 882 in-patients and 2298 out-patients. Non-associated hospitals received £710 for 151 in-patients and 75 out-patients. Payments to the West Sussex county council for treatment of 843 children of members amounted to £44.

Board of Control

Dr. G. W. J. Mackay and Dr. Flora H. M. Calder have been appointed commissioners of the Board of Control (Lunacy and Mental Deficiency), on the retirement of Dr. S. E. Gill and Surgeon Rear-Admiral E. T. Meagher.

Dr. Mackay received his medical education at Edinburgh, where he graduated M.B. in 1921. In 1926 he took the diploma in psychological medicine. He acted as assistant medical officer at St. Andrew's Hospital for Mental Diseases, Northampton, and was deputy medical superintendent to the City Mental Hospital, Nottingham, before taking up his present post as medical superintendent of the Sandhill Park Institutes, Taunton. He has written on luminal in epilepsy and on glucose tolerance curve in that disease.

Dr. Calder was also educated at Edinburgh, where she graduated M.B. in 1923, proceeding to the M.D. in 1929. She obtained the diploma in psychological medicine in 1929, and is also a member of the Middle Temple. She is at present second senior assistant at the County Mental Hospital, Winwick, Warrington.

Medical Defence Union

At a council meeting last week Dr. Robert Forbes was unanimously appointed secretary of the Union in succession to Dr. James Neal, recently deceased.

Dr. Forbes was born at Wishaw in 1893, and graduated in medicine at Glasgow University in 1915, having already held a house surgeoncy in the Royal Victoria Infirmary. After acting as assistant and locum in the Kingdom of Fife and in the county of Durham, he was granted a commission in the R.A.M.C. In this organisation he was associated with Prof. Lovatt Evans in the administration of gas defensive arrangements. His original unit was the 137th Field Ambulance. On demobilisation he entered into partnership with Dr. John Galloway at Gateshead-on-Tyne, becoming assistant surgeon, and ultimately hon. consulting surgeon to the Gateshead Children's Hospital. He engaged himself prominently in the civic and public work of the Tyneside, and was well known throughout the North of England. In medico-political matters he took an active part, becoming chairman of the Gateshead division, a vice-president of the North of England branch, and a member of the Gateshead insurance and panel committees. He was instrumental in establishing many public medical services in the area, and took part in several successful struggles to secure adequate rates of remuneration for the colliery surgeons of that district. After 14 years of general practice Dr. Forbes was invited to become deputy medical secretary of the British Medical Association, a position which he is now resigning to take up his duties with the Medical Defence Union. While deputy medical secretary Dr. Forbes also acted as secretary to the ethical, insurance acts, medico-political, and dominions committees. At the present time he is a member of the Harrow urban district council and a Justice of the Peace.

Society for Relief of Widows and Orphans of Medical Men

At the quarterly court of directors, held on May 10th, Mr. V. Warren Low, the president, being in the chair, the deaths was reported of three members and of three widows in receipt of grants. One had been on the funds for 22 years and had received in grants £1870; another for 11 years with total grants of £880. A donation of £41 19*s.* 7*d.* was reported from the Bovril Medical Agency. Three new members were elected. Membership of the Society is open to any registered medical practitioner who is at the time of his election residing within a 20-mile radius of Charing Cross. The annual general meeting will be held on May 22nd. Particulars of membership from the secretary, 11, Chandos-street, London, W.1.

A Medical Tour

In connexion with the 150th anniversary of the Allgemeines Krankenhaus, Vienna, a special tour has been arranged that will afford medical men and their friends an opportunity of taking part in the celebrations. The tour is planned to last from May 11th to May 23rd. Starting from London on the afternoon of Saturday, May 11th, the visitors will arrive on Sunday night, and be plunged immediately into the sessions of the medical societies of Vienna, where clinical meetings have been arranged on numerous subjects. The working side of the tour, as planned, is relieved by excursions to places of interest in Vienna and its vicinity, and in particular it is mentioned that an optional method of terminating the proceedings by a visit to Bad Gastein will be found pleasurable. The inclusive price for the tour is, roughly, £32, and full information and details of other expenditure can be obtained from the Austrian Federal Railways, 31, Lower Regent-street, London, S.W.1.

Russian Congress in Physiotherapy

The third All-Russian congress of physiotherapy will be held at Odessa from August 25th to 30th. The principal subjects for discussion will be hyperergy and physical therapy; acute infectious diseases and physical therapy; consequences of injuries and physical therapy; the vegetative nervous system and physical therapy; short waves in biology and medicine; the significance of skin in the mechanism of physiotherapeutic actions. The principal speakers will include Prof. Brustein (Moscow), Prof. Anikin (Moscow), Prof. Nilsen (Sevastopol), Prof. Broderson (Leningrad), Prof. Plotnikov (Moscow), and Prof. Rachmanov (Moscow). Further information may be had from the president of the committee, Prof. Brustein (Moscow, U.S.S.R., Serebrjanny per. 5, room 7). It is suggested that travelling arrangements should be made through the "Intourist" travel bureau, Bush House, W.C.2.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

FRIDAY, April 26th.

Epidemiology and State Medicine—Disease in Children. 8.30 P.M. Special Discussion: The Problems of Prophylaxis in Pulmonary Tuberculosis. Openers: Dr. A. S. MacNalty and Dr. Gregory Kayne, Dr. Charles Miller and Dr. Reginald Lightwood; and Dr. D. A. Powell (Society of Medical Officers of Health). Society of Medical Officers of Health have been invited.

Urology. Week-end Meeting in Paris. 9 A.M. 1. Visit to Hôpital Lariboisière, conducted by Dr. Heitz-Boyer. 2. Visit to Hôpital Saint-Joseph, conducted by Dr. Papin.

SATURDAY.

Urology. Meeting in Paris continued. 9 A.M. 1. Visit to Hôpital Necker, conducted by Prof. Marion. 2. Visit to Hôpital Saint-Louis, conducted by Dr. Gouverneur.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, W.

THURSDAY, April 25th.—8.30 P.M., Dr. Emanuel Miller: The Medico-Legal Aspects of Aberrations in Adolescence.

ST. JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY, 49, Leicester-square, W.C.
WEDNESDAY, April 24th.—4.15 P.M., Mr. Philip H. Gregory, Ph.D.: The Parasitic Activity of the Ringworm Fungi.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, London, W.
MONDAY, April 22nd, to SATURDAY. Afternoon course in psychological medicine at Maudsley Hospital, Denmark-hill, S.E. (open only to members and associates of the Fellowship.)

INSTITUTE OF MEDICAL PSYCHOLOGY, Malet-place, W.C.
WEDNESDAY, April 24th.—3 P.M., Dr. H. Crichton-Miller: Enuresis Nocturna. 4.30 P.M., Dr. Cedric Shaw: Physical and Psychic Factors in Symptom-formation.

UNIVERSITY OF BIRMINGHAM.
FRIDAY, April 26th.—3.30 P.M. (Children's Hospital, Ladywood-road, Birmingham), Prof. Leonard Parsons: Demonstration of Cases.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.
WEDNESDAY, April 24th.—4.15 P.M. (Western Infirmary). Dr. Hugh Morton: Medical Cases.

ROYAL INFIRMARY, Dundee.
THURSDAY, April 25th.—3.15 P.M., Prof. Tulloch: A Review of Blood Infections with Bacteria. 4.15 P.M., Dr. G. H. S. Milln: Use of X Rays in the Treatment of Malignant Cases.

Appointments

FORRESTER-WOOD, W. R., M.B. Camb., F.R.C.S. Eng., has been appointed Hon. Assistant Surgeon to the Royal Alexandra Hospital for Sick Children, Brighton.
JUNGMANN, HANS, L.R.C.P. Edin., M.D. Berlin, Hon. Second Radiologist to the London Jewish Hospital.
KNOX, J. C., M.B. Glasg., D.P.H., Medical Superintendent of the Royal Infirmary, Aberdeen.

Vacancies

For further information refer to the advertisement columns

Banbury, Horton General Hospital.—Res. M.O. At rate of £150.
Barnsley, Beckett Hospital and Dispensary.—Res. Surg. O. £300.
Bath and Wessex Children's Orthopædic Hospital. Combe Park.—Anæsthetist.
Birmingham University.—Walter Myers Travelling Studentship £300.
Bradford Royal Infirmary.—Two H.S.'s. Each at rate of £135.
Brighton, Royal Alexandra Hospital for Sick Children.—H.S. and H.P. Each £120.
Brighton, Sussex Maternity and Women's Hospital.—Second Hon. Obstet. Physician.
British Legion Village, Preston Hall, near Maidstone.—Asst. to Med. Director. £500.
Cambridge, Addenbrooke's Hospital.—Two H.P.'s. Each at rate of £130.
Carshalton, Queen Mary's Hospital.—H.P. At rate of £120.
Charing Cross Hospital, W.C.—Hon. Anæsthetist.
Chester Royal Infirmary.—Hon. Asst. Phys.
City of London Hospital for Diseases of the Heart and Lungs, Victoria-park, E.—Registrar. Also Asst. Radiologist.
Dewsbury and District General Infirmary.—Second H.S. £150.
Dorchester, Dorset Mental Hospital, Herrison.—Sen. Asst. M.O. £450.
Eastbourne, Princess Alice Memorial Hospital.—Res. H.S. £150.
Eastbourne, Royal Eye Hospital, Pevensey-road.—H.S. £100.
East Ham Memorial Hospital, Shrewsbury-road, E.—H.S. &c. At rate of £120.
Evelina Hospital for Sick Children, Southwark, S.E.—H.S. At rate of £120.
Glamorgan County Council.—Asst. M.O. £400.
Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—H.S. At rate of £100.
Harrogate, Royal Bath Hospital.—Res. M.O. At rate of £156.
Hawkmoor Tuberculosis Sanatorium, near Bovey Tracey.—Res. M.O. At rate of £250.
Holland (Lincs) County.—Two Asst. County M.O.H.'s, &c. £750 and £600 respectively.
Hong Kong University.—Professor of Obstetrics and Gynæcology. £1000–50–£1100.
Huddersfield Royal Infirmary.—Res. Surg. O. £225–£250.
Infants Hospital, Vincent Sq. Westminster.—Res. M.O. At rate of £200.
Ipswich, East Suffolk and Ipswich Hospital.—Cas. O. Also H.S. £150 and £120 respectively.
Kinross-shire Ochill Hills Sanatorium. Milnathart.—Asst. M.O. At rate of £150.
Lambeth Hospital, Brook-street, S.E.—Asst. M.O. £350. Also Pathologist at Group Laboratory. £1100–£50–£1300.
Lancaster Royal Infirmary.—Jun. H.S. At rate of £130.
Lancaster County Mental Hospital.—Asst. M.O. £500.
Leeds, General Infirmary.—Physicist. £300.
Lincoln County Hospital.—H.S. At rate of £150.
Liverpool, Alder Hey Children's Hospital.—Res. Deputy Med. Supt. £450.
Llanelly and District Hospital.—H.S. £150.
London County Council.—Divisional M.O. £800. Also Asst. M.O.'s. Each £470.
London County Council District Medical Service.—Temp. Dist. M.O.'s. At rate of £300, £245, £160, also £150.
Manchester, Ancoats Hospital.—Res. M.O. At rate of £150. Also Med. Reg. £50.
Manchester Ear Hospital, Grosvenor-square.—H.S. At rate of £150.
Manchester Northern Hospital.—H.S. £150.
Market Drayton, Cheshire Joint Sanatorium.—Clin. Asst.
Middlesex C.C.—Ophth. Surgeon. £2 12s. 6d. per session.
Newark General Hospital.—Res. H.S. £175.
Newcastle-upon-Tyne Eye Hospital.—Jun. Res. H.S. £100.
North Western District, Child Guidance Clinic.—Med. Director. £300.
Nottingham and Midland Eye Infirmary.—Res. H.S. £200.
Queen's Hospital for Children, Hackney-road, E.—Asst. Phys.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—H.P. At rate of £100.
St. George-in-the-East, Raine-street, E.—Asst. M.O. Grade I. £350. Also Asst. M.O. Grade II. £250.
St. Mary's Hospital, W.—Jun. Clin. Asst. for X Ray Dept. £50.
St. Mary's Hospital for Women and Children, Plaistow, E.—Res. and Asst. Res. M.O.s. At rate of £175 and £120. respectively.
St. Nicholas Hospital, Plumstead, S.E.—Temp. Asst. M.O. At rate of £250.
Sheffield Royal Infirmary.—Jun. Asst. Pathologist. £300. Also H.P. At rate of £80.
Shrewsbury Royal Salop Infirmary.—Res. H.S. At rate of £160.
Singapore, King Edward VII College of Medicine.—Ophth., Surg. and Phy. and Lecturer in Ophthalmology. $850 per mensem.
Southern Rhodesia Medical Service.—Government M.O. £600.
Stockport Infirmary.—H.P. £150.
Stoke-on-Trent, North Staffordshire Royal Infirmary.—Cas. H.S. Also H.S. for Aural and Ophthalmic Dept. Each at rate of £150.
Sunderland Royal Infirmary.—Res. M.O. £250.
Swansea County Borough.—Asst. M.O. £500.
Swansea General and Eye Hospital.—H.S. At rate of £150.
Walsall General Hospital.—H.S. At rate of £150.
Warwick, King Edward VII Memorial Sanatorium, Hertford Hill. Jun Asst. M.O. At rate of £200.
West Bromwich, Hallam Hospital.—Res. H.P. At rate of £200.
West London Hospital, Hammersmith-road, W.—Res. Anæthetist. At rate of £100. Also Hon. Asst. Anæsthetists.
Weston-super-Mare General Hospital—H.S. £150.
Wolverhampton and Midland Counties Eye Infirmary.—H.S. £150.
Woolwich and District War Memorial Hospital, Shooter's Hill, S.E.—Hon. Laryngologist. Also Surg. Reg. £100.
Worksop, Victoria Hospital.—H.S. At rate of £160.

Births, Marriages, and Deaths

BIRTHS

CROOKES.—On April 10th, the wife of Frank Raymond Crookes, M.B., B.Ch. Oxon., of Eckington, Derbyshire, of a son.
INGRAM.—On April 6th, at Barnet, the wife of Peter Ingram, M.B. Aberd., of a daughter.
MILLER.—On April 10th, at Hull, the wife of R. D. Miller, M.D. Edin., of a daughter.

MARRIAGES

SANDELL—MAGNUS.—On April 9th, at the West London Synagogue, David Sandell, M.D., F.R.C.S. Eng., to Jessie Dora, eldest daughter of the late Laurie Magnus and of Mrs. Laurie Magnus, of Cambridge-square, W.
SLADEN—CHAPMAN.—On April 11th, at Accra, Gold Coast, F. J. Sladen, M.R.C.S. Eng., D.T.M. & H. Eng., to Kathleen Sutton, eldest daughter of the late Lieutenant C. S. Chapman, R.A., and Mrs. Chapman, Strand-on-the-Green.

DEATHS

ALEXANDER.—On March 31st, at Edgware, Middlesex, H. Edward Alexander, M.D. Penna, M.R.C.S. Eng.
BAIGENT.—On April 11th, suddenly, at Northallerton, William Baigent, M.B.E., M.D. Durh.
BRAXTON HICKS.—On April 7th, John A. Braxton Hicks, M.D., D.P.H., M.R.C.P., of 30, West Kensington Mansions, W.14, from pneumonia. Aged 50. L.C.C. Group Pathologist to Lambeth Hospital. Formerly of Westminster Hospital.
FORDE-MUNRO.—On April 11th, suddenly, in London, Thomas Arthur Forde-Munro, M.R.C.S. Eng., of Southsea.
FORSYTH.—On April 5th, at Alloway, Ayr, John Andrew Cairns Forsyth, F.R.C.S. Eng., Chevalier of the Legion of Honour.
HAINWORTH.—On April 9th, at Kirk Ella, near Hull, Edward Marrack Hainworth, M.B.E., M.D. Lond., F.R.C.S. Eng., aged 65 years.
OWEN.—On April 2nd, at Topsham, S. Devon, Charles Arthur Owen, M.D., F.R.C.S. Edin., V.D., late of Simla, India.
PAKES.—On April 9th, at Nuneaton, W. C. C. Pakes, M.R.C.S. Eng., D.P.H., aged 69.
PINCHES.—On April 9th, at Kensington Mansions, S.W.5, Lieut.-Colonel William Hooper Pinches, R.A.M.C. (retd.).
TODD.—On April 6th, in London, George Todd, L.R.C.P. Edin., late of Torquay, aged 78.
TRAIL.—On April 10th, David Herbert Trail, M.B. Lond., at Falmouth, aged 60.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

INFLUENZA IN 1935

On another page Dr. Gladys Wauchope concludes a study of nine minor epidemics of influenza up to the season 1932–33. The most recent Epidemiological Report of the Health Section of the League of Nations gives a provisional account of the epidemic through which the world has just been passing. As far as we are concerned the epidemic is not yet at an end, although the end may be in sight. Information about mortality has not been received from most other countries, but it is clear that influenza in 1935 has been characterised generally by its rapid spread, its attacking a large proportion of the population at about the same time, and its relative mildness. The culminating point in American towns was reached earlier than here—viz., in the week ended Jan. 12th. In the Scandinavian countries the epidemic seems to have been especially widespread. In the north of Norway as many as half the schoolchildren were ill at the same time, but there were few deaths—only 17 recorded in Denmark. In Germany the type of attack was somewhat more severe and the number of deaths in the great towns was comparable with that of 1930–31; it was at its worst in the maritime towns, the Rhineland and Southern Germany, where the peak was reached in the week ended Feb. 23rd. In Western Switzerland at the end of January the epidemic was for a time alarming; there was an abrupt increase in the mortality up to 17 per thousand at the beginning of February, but a rapid decline followed. In France, as was widely advertised, a number of deaths were reported in January from garrison towns, but apart from these the age distribution of deaths was as usual in the mild form of influenza; in Jan.–Feb. there were 47 deaths between 20 and 39 years, 54 between 40 and 59 years, 119 deaths at later ages. Of all the reported outbreaks that in the Irish Free State seems to have been the mildest.

SPALLANZANI

An interesting sketch of this eighteenth century physiologist is contributed to the December number of the Yale Journal of Biology and Medicine by Dr. James B. Hamilton, under the title of "The Shadowed Side of Spallanzani." His period (1729–99) is practically contemporaneous with that of John Hunter; but the two were very different in character. Spallanzani was a scholar and seems, in everyday life, to have been a slippery customer, though his scientific researches would appear to have been conducted with scrupulous honesty; while Hunter, though no scholar, was one of the straightest men that ever lived.

The son of a lawyer, Spallanzani was at first destined to follow his father's profession, but legal study proving distasteful, he was sent to Bologna to work under his relative, Laura Bassi. In due course he became a teacher of logic, metaphysics, and Greek. Six years later he was holding the chair of Natural History at Modena and at about this time entered Holy Orders, not on account of any religious ardour, it would seem. As an Abbé he received fees for masses and skilfully avoided ecclesiastical censure for so doing. At the age of 40 years he became director of Maria Theresa's Museum at Pavia. His researches on spontaneous generation were a really important piece of work. It drew down upon him the ridicule of Voltaire and Buffon, the latter of whom considered experiments "as distasteful, even rankly disagreeable." In 1748 Needham had published his experiments on meat juices, boiled in corked phials, in which the subsequent development of putrefactive changes led him to postulate a theory of spontaneous generation. Spallanzani repeated these experiments, sealing the necks of the flasks in a flame and was able to refute John Needham. This is all strangely prophetic of the work of Pasteur and Lord Lister, and had he known he might have given the theory of asepsis to the world a century or more before it actually came to pass. But he seems never to have suspected the importance of his discoveries and the bearing they might have on surgery.

Spallanzani also experimented on animalcules in a vacuum and found that some could live without air. He had proved the presence of anaerobic bacilli had he only known it. Other researches dealt with the chemistry of the gastric juice and the elasticity of the blood corpuscles; and he has even been credited by Castiglioni with the discovery of the white blood corpuscles. This seems to be very doubtful. His researches on respiration were published after his death. As director of the museum he was for ever taking tours for the collection of specimens. The university, tiring of the expenses of these trips, tried to put a stop to them. Spallanzani thereupon wrote to the Viennese Government saying that his health was bad and that it was imperative that he should get away from the damp climate of Pavia. The Government promptly doubled his salary and sent him to Turkey for a year's holiday. On his return he found that Volta had been examining his private collections and discovering there objects which were missing from the university museum. Spallanzani's wiliness enabled him to come out of this scandal with credit and Volta and his partners were dismissed. Spallanzani seems to have been a rare hand at obtaining money, at wriggling out of unpleasant accusations, and avoiding damage at the hands of Napolean's army which was operating in those parts at that time.

A monument of him is at Scandiano and a bust at Pavia; while in the museum reposes his bladder. "Spallanzani had ordered it to be removed after his death. Science needed to know about diseased bladders." The paper is a most readable account of a pioneer in physiological research and is accompanied by a good bibliography.

HOW COMMON ARE THE NEUROSES?

In an attempt to infuse some measure of accuracy into the vague estimate that in general practice a third to half the cases seen are neuroses, with or without an organic element in them, Dr. Bengt Boye has studied the records of the 26,655 patients treated in the medical wards of the Sabbatsberg Hospital in Stockholm, in the period 1926–33 (Nord. Med. Tidskr., Feb. 16th, 1935, p. 252). Apart from the neurosis statistics of Dr. Kahlmeter in connexion with national health insurance, no systematic study of this kind has hitherto been undertaken in Sweden. Of the records examined, 11,546 concerned male and 15,109 female patients, and in 7·1 per cent. neuroses were diagnosed. The traumatic neuroses—there were only 14 cases—were equally divided between the sexes, but the psychoneuroses, including neurasthenia and hysteria, were much more numerous among the women, the ratio of male to female patients being 205 to 559, or 1 : 2·7.

Boye's third table bears witness to the stupendous character of his task. In it he has classified the various neuroses according to sex and distribution in the first and second departments of his hospital. Here are recorded 251 cases of vegetative or digestive neurosis, 80 cases of vegetative-digestive neurosis associated with suspect ulcer of the stomach or duodenum, 124 cases of vegetative-digestive neurosis with definite ulcer of the stomach or duodenum, 119 cases of chronic entero-colitis with spastic constipation plus neurosis, and 99 cases of myalgia or neuralgia (including sciatica) with neurosis. The examples just quoted are those with the highest figures, but they are not exhaustive. The fact that in the period under review the diagnoses of neurosis was made by many different doctors may have contributed to the impartiality, if not to the accuracy, of the sum total of their verdicts; and it is note-

worthy in this connexion that the one medical department was much more generous with its neurosis labels than the other, although the character of their material was supposed to be identical.

The interplay of functional and organic disease is so complex, and our knowledge of the former so incomplete, that an investigation such as this can hardly be expected to take us very far. But Boye's publication may at least encourage the recorders of hospital cases to give precision to their verdicts.

REDUCTION OF INFANT MORTALITY IN IRELAND

OUR Dublin correspondent writes: "Speaking at the conclusion of the debate on the estimates for his Department in the Dáil last week, Mr. Sean T. O'Kelly, Minister for Local Government and Public Health, gave some further particulars as to the infant mortality in urban areas. In his opening statement he had said that the general infant mortality had diminished from 65 per 1000 births in 1933 to 63 per 1000 in 1934, the previous average for five years being 69. He now added that the rate in all urban areas had decreased from 87 in 1933 to 78 in 1934, while the rate in rural areas had increased from 52 to 53. The four cities had shown the following decreases: Dublin, 83 to 79; Cork, 89 to 79; Limerick, 132 to 77; and Waterford, 102 to 88. The causes of this very pleasing improvement are not obvious, but some credit should be given to the extension of infant welfare schemes."

AN "L" OF A DIFFERENCE

Colonel James K. McConnel, author of "Adjustment of Muscular Habits," an excellent little book dealing with lines of treatment suggested by its title, writes as follows:—"In the reports concerning the House of Lords inquiry into the Osteopaths Bill, mention has been made of McConnell and Teal's text-book, 'The Practice of Osteopathy.' It would be a great kindness to me and others if you would allow me to mention that the part author of 'The Practice of Osteopathy' is one Carl Philip McConnell, I believe an American subject."

The book was written by Carl Philip McConnell and Charles Clayton Teal, and was first published about 30 years ago in Kirksville, Missouri, a later edition having appeared in 1920.

NEW PREPARATIONS

ERGOMETRINE.—Messrs. Burroughs Wellcome & Co. announce the commercial issue of the new ergot alkaloid, ergometrine, the isolation of which was described by H. W. Dudley and Chassar Moir a month ago (Brit. Med. Jour., April 6th, p. 520).

Four preparations of the alkaloid are issued for therapeutic use: 'Tabloid' Ergometrine, 0·5 mg. for oral administration; 'Wellcome' Solution of Ergometrine, 0·5 mg. in 2·5 c.cm. for oral administration; 'Tabloid' Hypodermic Ergometrine, 0·25 mg. for intramuscular injection; 'Tabloid' Hypodermic Ergometrine, 0·05 mg. for intravenous administration. The alkaloid used in these preparations is of a high degree of purity and crystallises readily from a number of solvents, as described in Dr. Dudley's later communication (Brit. Med. Jour., April 13th).

Ergometrine used during the puerperium rapidly causes contraction of the uterus. Given orally, in a dose of 0·5 mg. to 1 mg., ergometrine produces contraction after an interval of 6½ to 8 minutes, the contractions being identical in mode of onset and general character with those produced by active liquid extracts of ergot. Given by intramuscular injection, in a dose of 0·25 mg. to 0·5 mg., it produces strong uterine action in 3½ to 4½ minutes. Given intravenously, it produces in doses of 0·05 mg. a strong response in 110 seconds and in doses of 0·1 mg. in 65 seconds.

USEFUL CIRCULARS

FROM the Crookes Laboratories, Park Royal, London, N.W., comes a short pamphlet setting out the use of intravenous solutions of saline glucose and other infusions, and suggesting that the extensive use of collosol transfusions at home and abroad affords evidence of the absolute reliability of the solutions. The literature of the subject is carefully reviewed, and the construction of the collosol transfusion ampoule is clearly explained. Additions to the list of collosol solution are in preparation for use in cases of collapse.

By the Boots Pure Drug Co., Ltd., Nottingham, two booklets have been published through the publicity department of the firm giving serviceable information in simple form:—

1. *Special Medical Products.*—This pamphlet informs us of the composition and designed employment of a large number of pharmaceutical preparations which are in regular use and most of which from time to time have been noted in our columns. It is written as such circulars should be, for claims when made are reasonable and the details accurate.

2. *Chloramine Antiseptics.*—Various chloramine antiseptics, though alluded to in the first pamphlet, are here dealt with in detail. Chloramine-T is indicated in the treatment of all external infectious conditions, and a 0·5 per cent. solution is stated to be usually found adequate. In applications for the nose and throat and urethra, solutions of half that strength have been employed with success, while a 0·1 per cent. solution is recommended for use in eye infections. Solution tablets are supplied in various strengths. Dichloramine-T (toluenesulphondichloramide) can be employed where a constantly renewed antiseptic action over a long period is needed, and is therefore indicated, for example, in the treatment of such conditions as carbuncles and burns. Halazone (sulphondichloramino benzoic acid) is a chlorine compound for the sterilisation of individual quantities of drinking-water. It is supplied in tablets which quickly disintegrate and dissolve, but to obtain complete sterility the water should be allowed to stand for at least half an hour.

A MUNICIPAL YEAR BOOK

Sir Hilton Young contributes a preface to the 38th edition of the Municipal Year Book which has grown during the year by 80 pages, the total now numbering 1644. The increase has made the volume by no means bulky or unwieldy, the main sections of the book being divided by carton partitions carrying thumbnail labels which make reference pleasant and easy. In some directions the book has been improved for general reference; all national authorities, for instance, have now been brought within the compass of a single section, and in the sections dealing with different classes of authorities cross-references are given to the principal statutory provisions and the relevant legal decisions of 1934. Much of the descriptive material throughout the book has been rewritten; and for medical purposes it is gratifying to find the names and addresses of public analysts and of coroners, and a list of institutions appropriated in pursuance of the Local Government Act of 1929. Finally, a comprehensive review is given of leading law cases affecting local government during the past year. The Year Book is published by the Municipal Journal Ltd., Clement's-inn, London, W.C.2, at 30*s*.

PUBLIC SCHOOLS YEAR BOOK.—The forty-sixth yearly issue of this book shows little change except an alteration of title, to call attention to the fact that the book now contains full official information not only about public schools but about preparatory schools. This innovation was introduced last year and has given rise to much satisfaction. The Year Book is issued by H. F. W. Deane and Sons, The Year Book Press, Ltd., at 10*s*. 6*d*.